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May 20, 2011

Via Certified Mail

Valerie Mullins
Enforcement Specialist
EPA – Region 5
Enforcement Services Section 1
(Mail Code: SE-5J)
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: West Vermont Drinking Water Site
Speedway, Indiana
Site I.D. #B5UJ;
Technical Response to General Notice of Potential Liability;
Aimco Michigan Meadows Holdings, LLC

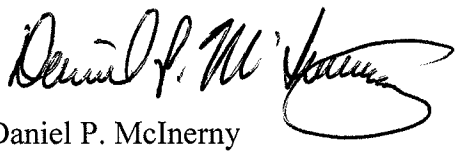
Dear Ms. Mullins:

Enclosed is a copy of the Technical Response to the General Notice of Potential Liability Letter prepared on behalf of my client, Aimco Michigan Meadows Holdings, LLC ("AMMH"), by Mundell & Associates, Inc. ("Mundell"). As I identified in previous correspondence, your original letter was directed to AIMCO, which is an entity that is not affiliated with the Michigan Plaza property. This report concludes that the Michigan Plaza, formerly owned by AMMH, is neither a source, nor a potential source, of the vinyl chloride groundwater impacts in the area of the West Vermont Street residences. In addition, the EPA's pursuit of AMMH conflicts with the Superfund Memorandum of Agreement ("MOA") entered into between the State of Indiana and EPA Region 5. A highlighted copy of the MOA is enclosed. Therefore, the EPA's pursuit of AMMH in connection with the West Vermont Drinking Water Site is unsupported from both a technical and a legal standpoint.

On behalf of AMMH, we respectfully request that the EPA close its file with respect to AMMH as it is not a Potentially Responsible Party with respect to the West Vermont Drinking Water Site. Thank you for your consideration of this information.

Sincerely,

BOSE MCKINNEY & EVANS LLP



Daniel P. McInerny

DPM/dgg
Enclosures
cc: Eric Hilty *(via electronic mail w/encl)*
Shelly Lam *(via electronic mail w/encl)*
Thomas C. Nash *(via electronic mail w/encl)*

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May 9, 2011

Ms. Valerie Mullins
Enforcement Specialist
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Enforcement Services Section 1
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77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: **Technical Response to the General Notice of Potential Liability Letter**
West Vermont Drinking Water Site
Speedway, Indiana Site ID#B5UJ
MUNDELL Project No. M01046

Dear Ms. Mullins:

This *Technical Response to the General Notice of Potential Liability Letter* is being submitted to the United States Environmental Protection Agency (U.S. EPA) by MUNDELL & ASSOCIATES, INC. (MUNDELL), on behalf of AIMCO Michigan Meadows Holdings, LLC (AMMH), to respond to potential concerns raised by the U.S. EPA in its February 17, 2011, letter that past historic activities or recent remediation efforts at the Michigan Plaza property located at 3801-3823 West Michigan Street in Indianapolis, Indiana (IDEM Incident #0000198, IDEM VRP #6061202) may have been responsible for the vinyl chloride (VC) groundwater impacts that have been detected in residential drinking water wells located west of the property on Vermont Street and Cossell Road in Indianapolis, Indiana. The technical aspects related to these concerns have been further discussed in a March 27, 2011, *Technical Memorandum Analytical and Hydrogeological Evaluation for the West Vermont Street Contamination Site Speedway, Marion County, Indiana* prepared for the U.S. EPA by Weston Solutions, Inc. (Weston).

Introduction

MUNDELL has completed numerous investigations associated with the Michigan Plaza property and the related Michigan Meadows Apartments property to the immediate north beginning in November, 2001. This work has included review of historical land use and potential sources of environmental contamination as part of a substantial

review of the Genuine Parts Company Site (herein termed the Genuine Site) located due north of the Michigan Meadows Apartments across Little Eagle Creek, as well as Phase I and II Environmental Site Assessment (Phase I and II ESA) activities for the Michigan Meadows Apartments, and the Michigan Plaza Site ("the Site") itself. Subsequent to this, several phases of site characterization work began to address the observed groundwater impacts determined to be present in the general vicinity of the Site (MUNDELL, 2001). After entry into the Indiana Department of Environmental Management's (IDEM's) Voluntary Remediation Program (VRP) in April 2007, MUNDELL began work on developing a Remediation Work Plan to address the soil and groundwater impacts determined to be caused by the former Accent Cleaners located at the Site. This involved additional site characterization work associated with an existing sewer line emanating from Michigan Plaza, and further delineation of soil and groundwater impacts.

Based on our review of all available environmental data, as well as the work activities performed to the north at the Genuine Site and to the northwest at Allison Plant 12 by Arcadis, it is our professional opinion that the Site is neither the source nor a potential source of the VC groundwater impacts in the area of the West Vermont Street residences. The following sections of this response summarize pertinent Michigan Plaza property conditions and environmental investigation results collected over the last 19 years that provide the necessary background and support for this conclusion.

Previous Environmental Site Investigations

Multiple Site environmental investigations have been completed since 1992 to assess the observed groundwater impacts detected in the general vicinity of this area of Indianapolis. The scope of these investigations are well documented and can be found summarized in the IDEM VRP *Michigan Plaza Remediation Work Plan* submitted to the agency on February 22, 2008, by MUNDELL. The results of these previous studies indicated that chlorinated volatile organic chemicals (VOCs) were detected to be present in the upper and lower aquifer system from several historic sources. Specifically, chemical impacts in the soil, groundwater, soil gas and indoor air at the Site have resulted from historical releases from upgradient chemical source areas located at the Genuine Site as well as from the former on-Site operations of Accent Cleaners. The primary indicator compounds are tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2-Dichloroethylene (cis-1,2-DCE) and vinyl chloride (VC). Groundwater impacts from former Allison Plant 12 operations have also been identified.

Type, Severity and Extent of Chlorinated Solvent Impacts

The previous studies indicated that groundwater impacts of cis-1,2-DCE and VC are present beneath nearly all of the Michigan Meadows Apartments (to the north) and Michigan Plaza. The horizontal extent of VC detections in the shallow groundwater system in January 2007 is presented on **Figure 1**. The horizontal extent of VC

detections in the deep groundwater system is presented on **Figure 2**. The Genuine Site has been identified as the source of these impacts. In addition, three limited release areas of PCE impacts from a leaky sewer line coming from the former Accent Cleaners located at the Site were fully delineated in studies completed by MUNDELL under the oversight of IDEM. The three source areas (denoted as ***Source Areas A, B*** and ***C***), containing mostly PCE in the groundwater, are shown in **Figure 3** relative to the local groundwater flow conditions. Daughter products related to the breakdown of PCE including TCE and cis-1,2-DCE were also identified during soil investigation activities. Soil impacts in the close vicinity of the sewer lines were observed approximately 10 ft to 20 ft below the ground surface (bgs) in all three identified Source Areas. Cumulative soil analytical results are presented on **Figure 4.**

As indicated in **Figure 4**, the horizontal extent of these releases from the former Accent Cleaners were limited to relatively small areas around and immediately downgradient (to the south-southeast) of joints and pipe connections in the sewer (see **Figures 5 and 6**). The locations of these releases were determined with a detailed video inspection of the sewer pipe leading from the former dry cleaner toward the west, north, and then east. The vertical extent of the on-Site impacts at the Site were the most severe in the shallow, upper 10 ft of the saturated aquifer, with much lesser impacts observed at greater depths. In particular, the distribution of VC concentrations was very restricted within the shallow system, with maximum concentrations of less than 40.6 ug/L within ***Source Areas A*** and ***B***, and less than 29.6 ug/L within ***Source Area C*** (**Figure 1**).

Subsequent additional groundwater sampling and testing during the *Phase II Environmental Site Assessment* in 2004 confirmed that the deeper aquifer chemical impacts were passing through the entire Michigan Meadows Apartment property and Michigan Plaza property from the larger Genuine Site cis-1,2-DCE and VC plumes (see **Figures 7** and **8**, taken from the *Further Site Investigation Report* completed by MUNDELL in 2004). This study delineated the deep zone VC impacts in groundwater along the northern edge of the Michigan Meadows Apartment property, showing it moving south from the upgradient Genuine Parts facility beneath Little Eagle Creek and onto the Michigan Meadows Apartments property. These impacts were observed in monitoring wells screened between 36 ft and 62 ft bgs. Vinyl chloride in groundwater was also present in Keramida (now Environ) wells MW-170S and MW-170D located along Holt Road immediately east of the Vermont Street and Cossell Road residences. MW-170D is screened from 34 ft to 39 ft bgs. These far western VC impacts were observed as early as January 31, 2002, after the initial installation of the wells.

It should be noted that although the results indicated that the deep VC plume coming from the Genuine Site was significant, they did not fully explain either the shallow or deeper VC concentration levels observed in Keramida Well Nos. MW-170S and MW-170D located south of Michigan Road and along the east side of Holt Road,

between the residential drinking water well locations and the Site. As shown in **Figure 1**, these 'higher than expected' VC impacts were considered anomalous in January 2007, and were not consistent with the impacts observed from either the Genuine Site or the Michigan Plaza Site. This fact is also supported by the general VC concentration distribution within the shallow and deep aquifers and the groundwater flow directions determined from numerous potentiometric maps generated for this area (see next section for additional discussions).

Additional Sewer Investigation and Groundwater Sampling

In order to address IDEM's concern that potential sewer back-ups could release chlorinated solvents along the sewer line leg west of the Site, MUNDELL agreed to perform additional subsurface investigation along the remaining legs of the sewer in a December 14, 2006, IDEM meeting. The ultimate purpose of this additional sewer line investigation was to determine the complete extent of chlorinated solvent releases from the sewer line resulting from the former Accent Cleaners previously located at the Site. The results of this investigation were well-documented in an April 1, 2007, *Further Site Investigation Addendum I Michigan Plaza* report submitted to IDEM.

This additional investigation included four (4) geoprobe locations (GP-A-06, GP-A-07, GP-A-08, and GP-A-09) as shown in Figure 1 of the *FSI Addendum I***.** The Geoprobe borings were advanced along the upstream flow direction of the western section of the sewer on Michigan Street and along the western drive of Michigan Meadows Apartments on January 11 and January 12, 2007. Each boring was probed under the direction of MUNDELL personnel using a truck-mounted Geoprobe Model 6610 drill rig. IDEM staff was present on Site on January 11, 2007, to witness the event.

From this investigation, it was concluded that releases of PCE and TCE from the sewer were confined to the south-central (***Source Area B***) and south-eastern (***Source Area C***) locations previously indicated in the *FSI*, and were not detected in the western portion of the Michigan Meadows Apartments property. The horizontal extent of PCE releases associated with the east-west sewer line system and connected piping are consistent with the previous *FSI* results (**Figure 9**), and indicate PCE/TCE releases only occurred in areas near the sewer line system intersections and joint locations as previously determined (**Figure 5**).

As indicated from this investigation, flow in the east-west sewer line comes from the west and flows to the east. Because of the hydraulic line of the sewer flow (as also documented by measured sewer invert elevations), only under some kind of extreme sewer backflow event could flow from the former Accent Cleaners move even slightly to the west. This investigation of the very next north-south sewer connection to the east-west leg indicated no leakage of PCE/TCE had occurred there. These observed conditions document that the solvent releases that did occur from the Site did not travel west of the intersection of the Michigan Plaza sewer within the east-west sewer leg, and

were only found in three very distinct release locations. Therefore, releases from the former Accent Cleaners did not migrate to the west of the Plaza, against the hydraulic flow direction.

Regional and Local Hydrogeologic Setting and Groundwater Flow Direction

The Site is situated south of Little Eagle Creek within an area containing variable thickness of outwash overlying complexly interbedded sand and gravel and fine-grained glacial till. Thick unbroken sections of sand and gravel are present locally, and are typically unconfined within the upper portions of the system, and confined or semi-confined by bodies of glacial till at depth (Fleming et al., 2000). The estimated thickness of the unconfined sand and gravel outwash in the area ranges from 20 to 40 ft on top of an undifferentiated Pre-Wisconsinan glacial till (Brown and Fleming, 2000).

From published hydrogeologic data in this area (e.g., Meyer et al., 1975; Herring, 1976; Smith, 1983; Fleming et al., 2000), regional groundwater flow in the vicinity of the Site is generally directed towards the south-southeast in the direction of flow of Little Eagle Creek**. Figure 10** shows the potentiometric surface and hydrogeologic settings of the shallow aquifer system in the vicinity of the Site. As indicated, near the major tributaries in this area of Marion County, groundwater flow is always directed toward and in the direction of surface water discharge. This can be seen by the orientation of the potentiometric surface lines in the areas near Little Eagle Creek. Because of its close proximity to Little Eagle Creek, groundwater flow at the Site is expected to be in a south-southeast direction.

Two-dimensional resistivity mapping was completed by MUNDELL north of the Site near the Little Eagle Creek in May 2005, (*Michigan Meadows Apartments Phase II Environmental Site Assessment, May 5, 2005*) in order to understand the detailed groundwater flow pathways. Results of this geophysical survey indicated a subsurface beneath the interpreted water table that does not consist of simple horizontal stratigraphic sequences, but rather exhibits numerous bowl-shaped “pods” suggesting possible coarse-grained channels or valleys in their morphology. These represent thicker and more uniform hydraulically-transmissive sand and gravel deposits east and north of the Site. West and north of the Site, the well-graded sands appear to have been deposited in a more complex channelized, interwoven and tortuous manner, suggesting groundwater flow pathways to be more restricted and less transmissive than those to the east. The interpretation of the depositional history of these coarse-grained (sands, gravels, cobbles) unconsolidated materials is one of a high-energy, fluvial system of braided channels proximal to a melting glacier margin.

High energy fluvial depositional environments tend to result in deposits of highly variable thickness and lateral extent. Based on work completed to date, MUNDELL believes that the continuity of the hydrogeologic units located north and west of the Site

near Allison Transmission Plant 12 has not been fully established by a sufficient investigation program.

The impacted residential wells on Vermont Street and Cossell Road are screened in saturated units ranging between 32 and 75 ft below ground surface (bgs). During February and April 2010, Allison Transmission completed soil borings approximately 500 ft upgradient of the nearest impacted residential well. The soil borings were advanced to depths ranging between 40 ft and 55 ft bgs. MW-1002, located near Allison Plant 12 approximately 1,400 ft upgradient of the impacted residential wells, was the only location sampled to a depth greater than 55 ft (**Figure 2**). Saturated sand units were identified at depths of 29 ft, 43 ft, 65 ft and 93 ft bgs in this location. Based on the hydrogeologic variability in the Site vicinity and the documented residential well depths (35 ft to 75 ft bgs), MUNDELL believes a more detailed investigation needs to be completed south and east of MW-1002 at depths greater than 45 ft to confirm that units identified by Arcadis south of Allison Plant 12 do not correspond to the screened units of the residential wells along Vermont Street and Cossell Road to the south-southeast.

Local and Site-Specific Groundwater Flow Direction

The Site is located in close proximity to Little Eagle Creek immediately to the east and Eagle Creek further to the west. Little Eagle Creek and Eagle Creek both flow in a general southeast direction until their convergence, approximately 1 mile southeast of the Site. Local groundwater flow is in the southeasterly direction, generally under the hydraulic control and discharge patterns of both Eagle Creek and Little Eagle Creek. The regional potentiometric surface for the shallow unconsolidated deposits in the Site vicinity is shown on **Figure 10**. Because the Site is immediately west of Little Eagle Creek, that surface water body exerts the most influence on groundwater flow direction at the Site.

Historical Site-specific groundwater elevation data has been collected at the Site for several years. Groundwater flow has consistently been shown to travel in a south-southeast direction, consistent with what would be expected from all regional groundwater flow information. MUNDELL has conducted groundwater elevation measurements at the Site beginning in early 2007. Since that time, all groundwater elevation gauging events have indicated a groundwater flow direction to the south-southeast. MUNDELL potentiometric surface maps encompassing this time period are included as **Figures 12a** through **12n.** Over the last 3 years, field activities have yielded no evidence of a west-southwesterly flow component to groundwater flow at the Site, nor has there been any evidence that 'short-term' elevated Little Eagle Creek water levels have caused any significant groundwater flow direction changes at the Site of a sufficient, sustained duration that would actually cause groundwater flow movement to the west.

During flood events in major central Indiana and Marion County rivers and tributaries, the extreme flood surface water profiles occur on the order of less than a few days, with elevated river levels perhaps present for less than a period of two weeks (Arihood, 1982; Cable, 1971; Gillies, 1976; Herring, 1976; Lapham, 1981; Meyer et al., 1975; MUNDELL, et al., 1995; Smith, 1983). These flooding periods, because of their relatively short duration, do not have the ability to reverse the groundwater flow direction for sufficient periods of time to cause movement of groundwater away from the rivers for greater than a few tens of feet, at a maximum. As such, they are not able to cause significant movement of VC in a cross-gradient direction to result in impacts at the separation distances between the Site and the residences.

U.S. EPA Elevation Survey and Groundwater Gauging Event – October 2010

On October 13, 2010, representatives from the U.S. EPA conducted a unified elevation survey and groundwater elevation gauging event including monitoring wells at the Allison Transmission facility, Genuine Parts facility and the Michigan Plaza and Apartments Site. Representatives from MUNDELL (AIMCO), Environ (Genuine Parts) and Arcadis (Allison Transmission) were present during the event. The results of the unified survey and groundwater gauging event were provided to MUNDELL on January 5, 2011. This data was utilized to calculate a potentiometric surface map encompassing all three identified Sites. The resulting potentiometric surface is included on **Figure 13**.

Groundwater flow at the Site is shown to be to the south-southeast. This has been the calculated direction of groundwater flow at the Site for some time, dating back to at least 2007, as exhibited by consecutive *Quarterly Groundwater Monitoring Reports* which have been provided to IDEM by MUNDELL on a quarterly basis.

The unified potentiometric surface map indicates a significant data gap relating to groundwater elevation data north and west of the Site (**Figure 13**). Soil and groundwater investigations completed in the vicinity in early 2010 left many questions regarding the continuity of saturated units southeast of Allison Plant 12. In addition to questions of hydrogeologic continuity are questions of groundwater elevation and flow direction.

The groundwater elevation data indicates a large area of southwesterly flow west and northwest of the Michigan Plaza Site. As previously discussed, there has been no current or historic regional or local evidence of west-southwest groundwater flow at the Site. In the event that the unified groundwater elevation data is valid and that groundwater is indeed flowing to the south-southeast from the Site, it should be noted that no identified source areas at the Site are located in an upgradient position from the impacted residential wells on Vermont Street and Cossell Road. **Figure 13** shows the three delineated source areas at the Plaza Site relative to the flow directions calculated from the unified U.S. EPA data.

It should also be noted that the potentiometric map that has been generated by the U.S. EPA elevation data was compiled while an active remediation system was pumping at Allison Plant 12. A more accurate map of the actual 'historical release' groundwater flow direction conditions in the vicinity should be completed without the active pumping system (*i.e*., to simulate the actual flow conditions that likely were present for many years prior to any pumping systems). These results would likely show even less of a southwestward flow component than the present U.S. EPA map does, since the effect of the pumping tends to wrap the potentiometric lines toward the west.

It is MUNDELL's opinion that additional groundwater wells and sampling locations to the south and east of Plant 12 (northwest of the Michigan Street and Holt Road intersection) would clarify groundwater flow direction in addition to saturated unit continuity in the Site vicinity.

Groundwater Elevations During Remediation Activities

The March 27, 2011, *Technical Memorandum* prepared for the U.S. EPA by Weston suggested that the liquids injected by MUNDELL during the two vegetable oil injections could potentially drive the groundwater flow in the direction of the residences by creating a mounding affect. Actual analysis and measurement made during the remediation activities demonstrate that this did not occur. The following summarizes the injection quantities and rates for the two events:

2007 TOTAL Injection Quantity = 6,506 gallons

- ***Source Area A****:* 1,962 gallons CAP 18™ over 8 days of field time.
  - ~ 250 gallons per day.
- ***Source Area B****:* 2,815 gallons CAP 18™ over 12 days of field time.
  - ~ 234 gallons per day.
- ***Source Area C****:* 1,729 gallons CAP 18™ over 5 days of field time.
  - ~ 342 gallons per day.

2009 TOTAL Injection Quantity = 1,884 gallons

- ***Source Area A****:* 455 gallons CAP 18 ME™ over 2 days of field time.
  - ~ 228 gallons per day.
- ***Source Area B****:* 585 gallons CAP 18 ME™ over 2 days of field time.
  - ~ 292 gallons per day.
- ***Source Area C****:* 844 gallons CAP 18 ME™ over 2 days field time.
  - ~ 422 gallons per day.

These quantities and injection rates indicate average injection rates of between 0.16 to 0.29 gallons per minute (gpm), or average rates well less than a small, low-flowing garden hose. Actual measurements of impact in the surrounding monitoring

wells indicated no groundwater level mounding effects beyond 10 ft from the injection points during the injections. The design called for a 10 ft radius of influence for the vegetable oil itself.

In summary, the injections caused no significant rise in groundwater levels, no reversal in groundwater flow direction, and no movement of vegetable oil beyond the injection radius of influence for all the injection points. As such, the operation of the injection itself could not have caused chemical impacts from the Site to move toward the residences.

Post-Remediation Groundwater Analytical Results

While on-Site aggressive bioremediation efforts consisting of two CAP 18™/CAP 18 ME™ injection events (August 2007 and February 2009) have increased VC concentrations by an order of magnitude or more in some Plaza Site locations, the majority of MUNDELL's remedial efforts have been applied to shallow groundwater impacts related to the three identified source areas at the Site. Elevated VC concentrations correspond to each CAP 18™/CAP 18 ME™ injection event and are present immediately downgradient of the injection locations for each Source Area (see **Figures 14a** and **14b)**. As indicated earlier, these increases occurred several years after VC concentrations were detected in monitoring wells MW-170S and MW-170D which are located between the Site source areas and the residences.

It should be noted that the VC concentrations generated from the remedial activities are the expected results of a known bioremediation process that is being utilized, and have begun to decline (see **Figure 14b**) and will continue to significantly decline over the next 1 to 3 years as the dechlorination of PCE, TCE and cis-1,2-DCE is completed, and the aquifer system returns to aerobic conditions.

Based on the above information, it appears that the deep groundwater VC impacts affecting the Vermont Street and Cossell Road residences are in wells screened between 35 ft and 75 ft bgs; the VC impacts seen at the Site are occurring in the shallower saturated unit (less than 30 ft in depth).

Split Groundwater Sampling Event – July 2010

A split groundwater sampling event with the U.S. EPA was conducted on July 7, 2010. The sampling event included the following monitoring well locations:

1) *One (1) MUNDELL monitoring well*: MMW-P-01.

2) *Two (2) Keramida/Environ monitoring wells*: MW-165D and MW-170D.

Groundwater samples were collected by U.S. EPA subcontractors and submitted for volatile fatty acid (VFA) analysis. MUNDELL collected split groundwater samples at each monitoring well location. Significant concentrations of VFAs are typically present in groundwater treated using enhanced bioremediation via injectable vegetable oils. Historical VFA analysis at the Site has shown elevated VFAs present in the groundwater, particularly immediately downgradient of the previous Source Area injection locations. Cumulative VFA analytical results are included in **Table 1**.

The U.S. EPA split sampling event in July 2010 showed non-detect VFA concentrations in well locations upgradient (MW-165) and cross gradient (MW-170D) of the Site. VFA analysis from MMW-P-01, located in the heart of the Site shows significantly elevated concentrations of all identified VFAs. VFA concentrations from the July 2010 split groundwater sampling event are included in **Table 2**. Since VC is understood to be a by-product of the enhanced bioremediation efforts at the Site, and the methods utilized introduce VFAs into the saturated zone, any VC impacts originating from the Site would likely be associated with the presence of VFAs. Should groundwater originating from the Site be flowing west-southwest toward the Vermont Street and Cossell Road residential wells as suggested by the U.S. EPA, we would expect to observe elevated VFA concentrations in monitoring well MW-170D, as observed in MMW-P-01 on the Site. Yet, the VFA concentrations in monitoring well MW-170D were not detected.

We believe that the results of this VFA analytical testing and its observed distribution does not support the conclusion that there is a connection between the Site remedial activities and the observed elevated VC concentrations in the deeper saturated units supplying the residential wells to the west.

Conclusions

Based on our analysis, we conclude the following:

1) The observed distribution of PCE/TCE/cis-1,2-DCE and VC in the vicinity of the Site indicates that the releases from the former Accent Cleaners had been fully delineated prior to initiating on-Site remedial activities, and that the impacted groundwater area did not include areas west of Michigan Plaza.

2) Investigations of the release of chemicals from the sewer line in the area of the Site indicated the historic releases occurred at three locations north and east of the Plaza, and not west of the Plaza. Given the nature of the east-west sewer line (flow to the east), it is not a potential source for residences west of Holt Road.

3) All groundwater potentiometric maps and measurements, including those made by the U.S. EPA during 2010, indicate groundwater flow is to the south-southeast from the Site Source Areas. As such, releases from the Site area will flow coincident with groundwater movement, and not toward the residences west of Holt Road.

4) Remediation activities at the Site, while generating VC in the groundwater, did not cause groundwater flow directions to move to the west. The amount of vegetable oil injected was not of sufficient volume or applied at a sufficient rate to elevate groundwater levels in any short or long-term fashion that could cause movement of VC in the direction of the residences.

5) Mapped subsurface conditions in the area point to deeper aquifer units south of the Allison Plant 12 location that have not yet been assessed by Allison, either through geophysical surveys, confirmed with deeper drilling and characterization, or through sampling, as potential pathways and sources of impacts to the residences.

6) Based on all the data gathered to date, we believe that the most likely historical chemical source areas causing the observed VC impacts at the residence wells are located either to the north/northwest or north/northeast and upgradient from the wells.

We appreciate the opportunity to provide additional interpretation of Site conditions on and surrounding the Michigan Plaza Site, with specific regard to the presence of VC in residential wells along Vermont Street and Cossell Road. If you have any questions regarding the content presented in this Technical Response Letter, please do not hesitate to contact us at (317) 630-9060 or via email (jmundell@MundellAssociates.com; swebb@MundellAssociates.com).

Sincerely,

MUNDELL & ASSOCIATES, INC.

Sarah E. Webb, L.P.G.
Project Hydrogeologist

John A. Mundell, P.E., L.P.G.
President/Senior Environmental Consultant

Attachments: Tables
Figures

cc: Mr. Peter Cappel, AMMH

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TABLES

FIGURES

TABLES

Table 1
Cumulative Groundwater Volatile Fatty Acid Analytical Results
Michigan Plaza Shopping Center and Michigan Meadows Apartments
Indianapolis, Indiana
MUNDELL Job No.: M01046

	Sample Date	Acetic Acid	Butyric Acid	Hexanoic Acid	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid and HIBA	Pentanoic Acid	Propionic Acid	Pyruvic Acid
		mg/l								
MMW-1S	6/6/2008	**9.000**	**0.140**	**0.350**	<0.100	<0.070	**0.350**	<0.070	**1.400**	<0.070
	1/19/2011	0.067 J	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MMW-9S	6/6/2008	**3.000**	<0.070	<0.100	<0.100	<0.070	**0.280**	<0.070	**1.100**	**0.220**
	1/19/2011	0.042 J	<0.050	<0.050	<0.050	<0.150	0.210 B	<0.070	<0.050	<0.150
MMW-11S	6/6/2008	**0.190**	<0.070	<0.100	<0.100	<0.070	**0.230**	<0.070	<0.070	<0.070
	1/19/2011	0.033 J	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MMW-P-01	7/7/2010	**2.500**	<0.05	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MMW-P-03S	6/6/2008	**31.000**	**0.450**	**0.140**	<0.100	**0.120**	**1.400**	**1.200**	**31.000**	**0.370**
	1/19/2011	0.054 J	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MMW-P-03D	6/6/2008	**53.000**	**0.430**	<0.100	<0.100	**0.230**	**1.200**	**0.380**	**24.000**	**0.850**
	1/19/2011	0.600	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MMW-P-06	6/6/2008	**60.000**	**1.700**	<0.100	<0.100	**0.210**	**1.400**	**1.200**	**29.000**	**0.440**
	1/20/2011	0.051 J	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MMW-P-08	6/6/2008	**0.120**	<0.070	<0.100	<0.100	<0.070	**0.220**	<0.070	<0.070	<0.070
	1/20/2011	**19.000**	**0.270**	<0.050	<0.050	0.110 J	<0.100	<0.070	**2.100**	0.110 J
MMW-P-09S	6/6/2008	**3.500**	<0.070	**0.260**	<0.100	<0.070	**0.290**	**0.140**	**5.300**	<0.070
	1/19/2011	0.057 J	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MMW-P-10S	6/6/2008	**0.110**	<0.070	<0.100	<0.100	<0.070	**0.210**	<0.070	<0.070	<0.070
	1/20/2011	**4.700**	0.150	<0.050	<0.050	<0.150	<0.100	<0.070	**0.260**	<0.150
MMW-P-10D	1/20/2011	**0.072**	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MW-168S	6/6/2008	**0.120**	<0.070	<0.100	<0.100	<0.070	**0.210**	<0.070	<0.070	<0.070
MW-170D	7/7/2010	<0.07	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MW-165D	7/7/2010	<0.07	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MMW-C-02	1/19/2011	0.039 J	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
PQL		**0.070**	**0.050**	**0.050**	**0.050**	**0.150**	**0.100**	**0.070**	**0.050**	**0.150**
MDL		0.006	0.004	0.006	0.006	0.044	0.01	0.012	0.007	0.033

Note:

All Values Over Laboratory Practical Quatitation Limit (PQL) are shown in**RED**

J flagged values indicate an estimated value.

B flagged values indicate analyte detected in a blank sample.

PQL - Practical Quantitation Limit

MDL - Method Detection Limit

Table 2
Groundwater Monitoring Well Volatile Fatty Acid Results
EPA Split Groundwater Sampling Event - July 2010
Michigan Plaza Shopping Center and Michigan Meadows Apartments
Indianapolis, Indiana
MUNDELL Job No.: M01046

Well ID	Sample Date	Acetic Acid	Butyric Acid	'Hexanoic Acid'	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid	Pentanoic Acid	Propionic Acid	Pyruvic Acid
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Monitoring Wells (Apts)										
MW-170D	7/7/2010	0.036 J	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
		0.027 J	<0.050	<0.050	<0.050	<0.150	0.014 J	<0.070	<0.050	<0.150
MW-165D	7/7/2010	0.028 J	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
		0.031 J	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
MMW-P-01	7/7/2010	**2.500**	<0.050	<0.050	<0.050	<0.150	<0.100	<0.070	<0.050	<0.150
		3.400	**2.000**	**1.900**	**2.000**	**1.900**	**2.000**	**19.000**	**2.000**	**1.900**
PQL		**0.07**	**0.05**	**0.05**	**0.05**	**0.15**	**0.1**	**0.07**	**0.05**	**0.15**
MDL		0.006	0.004	0.006	0.006	0.044	0.01	0.012	0.007	0.033

Note:

All Values Over Laboratory Practical Quatitation Limit (PQL) are shown in **RED**

J flagged values indicate an estimated value.

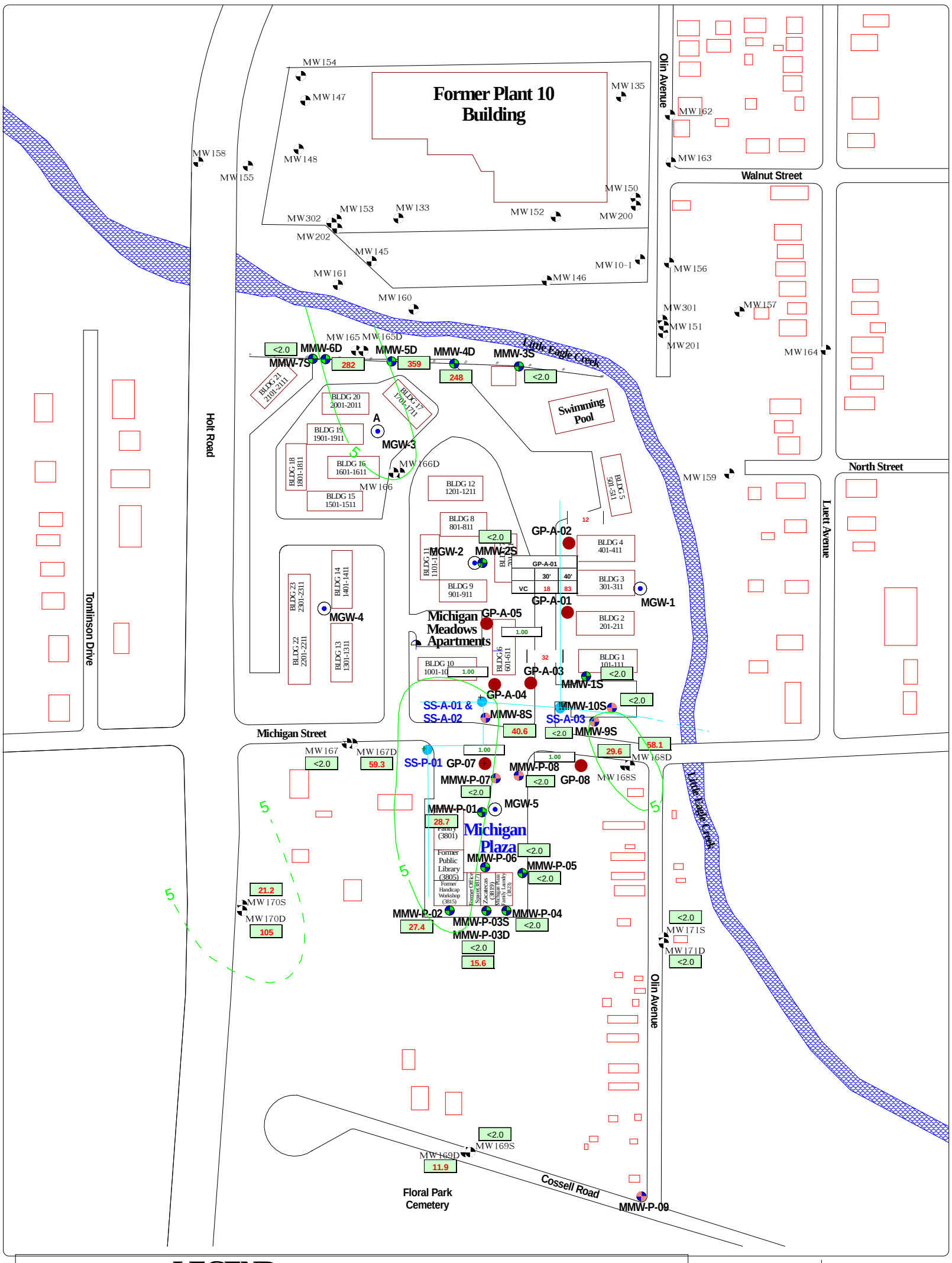
PQL - Practical Quantitation Limit

MDL - Method Detection Limit

Green shading indicates MUNDELL analytical data

Gray shading indicates EPA analytical data

FIGURES



LEGEND

- Fence
- MW160 — Keramida Monitoring Wells
- SS-P-01 — MUNDELL Sewer Sampling Locations (September & November 2005)
- GP-07 — MUNDELL Soil Boring Locations (September 2005)
- MMW-P-06 — MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
- MMW-P-07 — MUNDELL Monitoring Wells (January 2007)
- Vinyl Chloride Concentration in groundwater, ppb
- 11.9 — Vinyl Chloride Concentration, ppb
- Sewer Line Location

NOTE:
Values in RED are above RISC Industrial Cleanup Goals and those in BLUE are above RISC Residential Cleanup Goals

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

MUNDELL & ASSOCIATES, INC.
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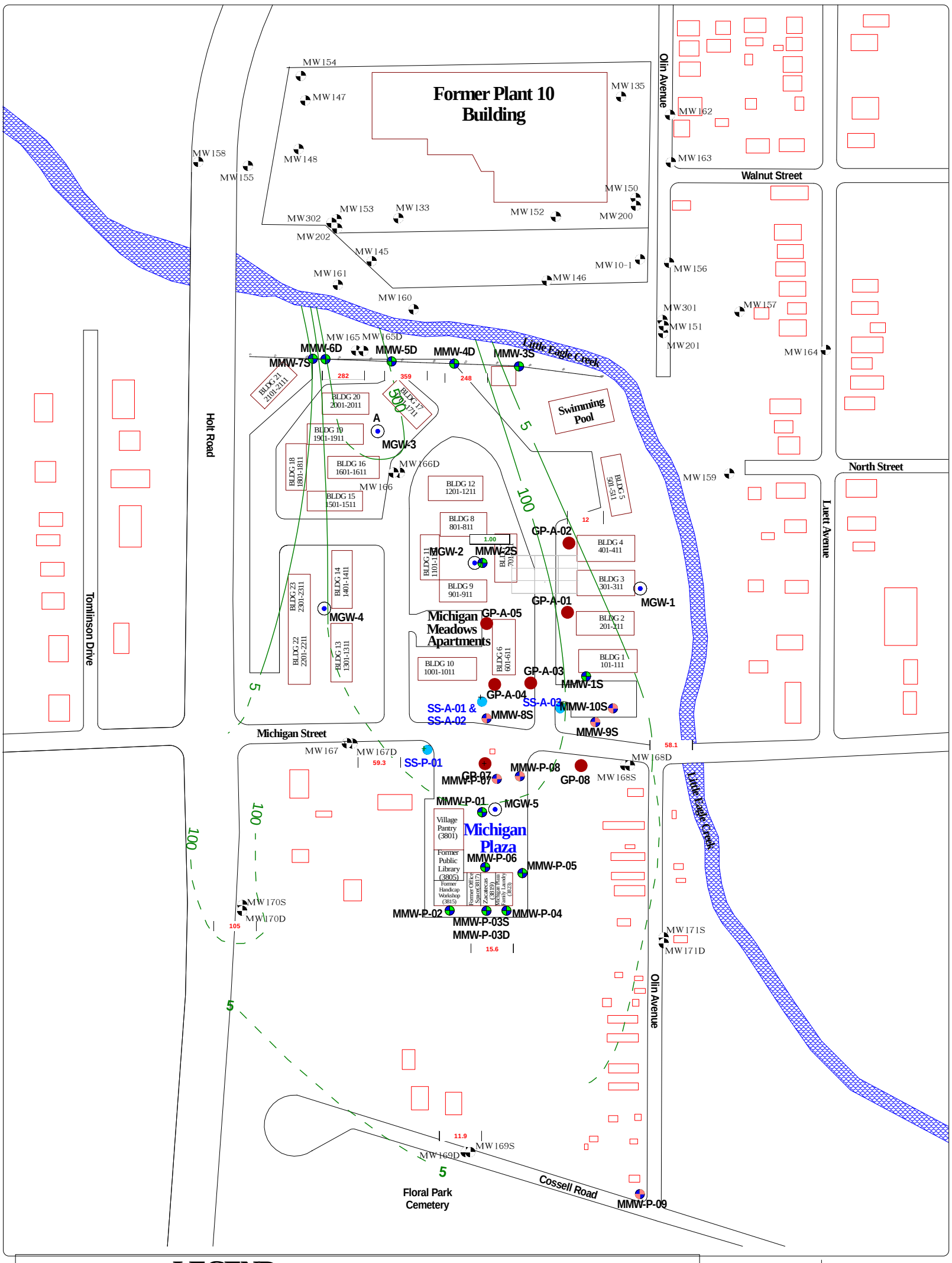
Project Number: M01046
Drawing File: Base Map.SKF
Date Prepared: 04/03/2007
Scale: 1"=200' ±

HORIZONTAL EXTENT OF VC IMPACTS TO GROUNDWATER (SHALLOW SYSTEM)
Further Site Characterization
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
1



LEGEND

- Fence
- MW160 — Keramida Monitoring Wells
- SS-P-01 — MUNDELL Sewer Sampling Locations (September & November 2005)
- GP-07 — MUNDELL Soil Boring Locations (September 2005)
- MMW-P-06 — MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
- MMW-P-07 — MUNDELL Monitoring Wells (January 2007)
- Vinyl Chloride Concentration in groundwater, ppb
- 49 — Vinyl Chloride Concentration, ppb

NOTE:
Values in RED are above RISC Industrial Cleanup Goals and those in BLUE are above RISC Residential Cleanup Goals

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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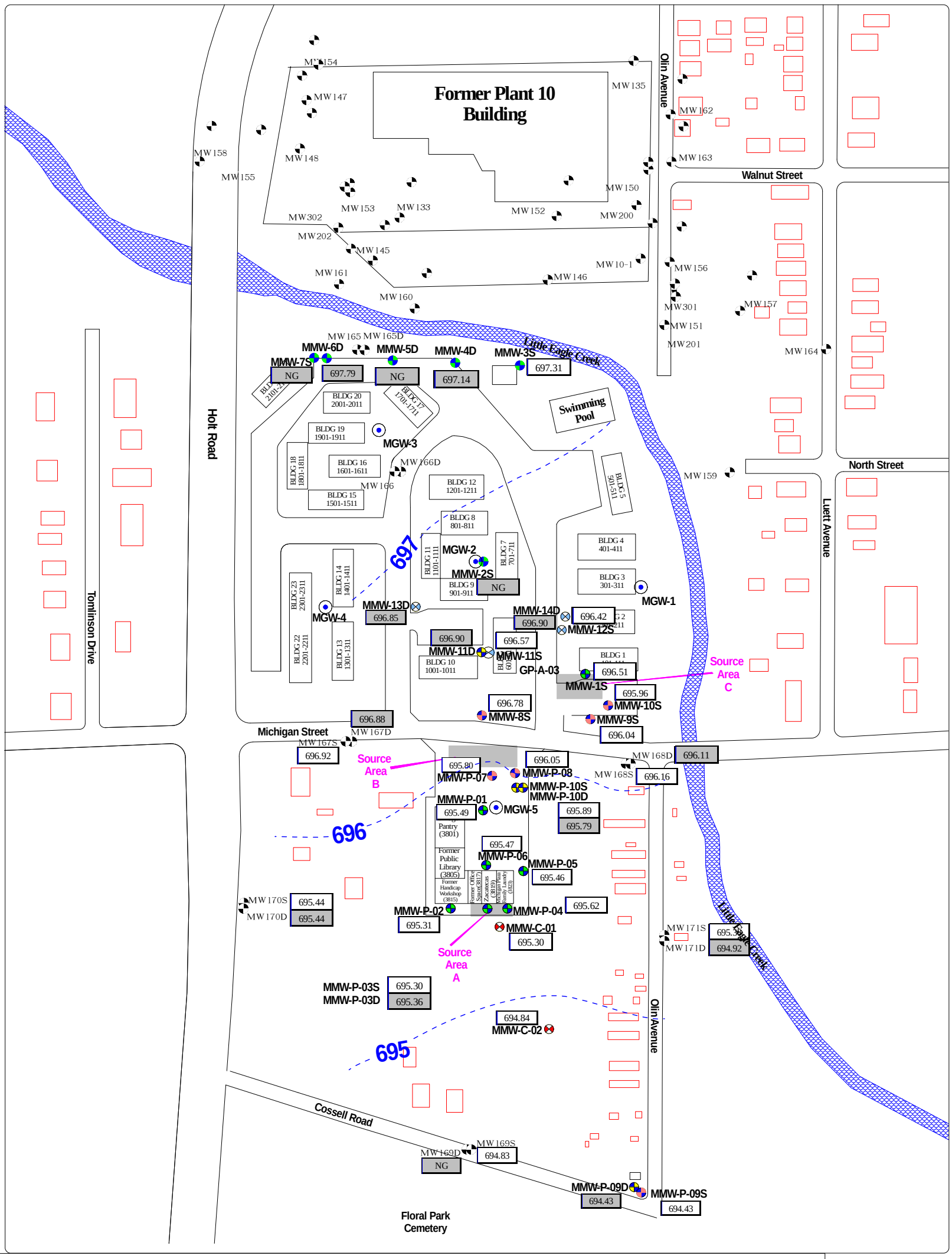
Project Number: M01046
Drawing File: Base Map.SKF
Date Prepared: 12/30/05
Scale: 1"=200' ±

HORIZONTAL EXTENT OF VC IMPACTS TO GROUNDWATER (DEEP SYSTEM)
Further Site Characterization
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
2



LEGEND

	Fence
MW160	Keramida/Environ Monitoring Wells
MMW-P-06	MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
MMW-P-07	MUNDELL Monitoring Wells (January 2007)
MMW-P-09D	MUNDELL Monitoring Wells (May-June 2007)
MMW-C-01	MUNDELL Monitoring Wells (July/August 2008)
MMW-11S	MUNDELL Monitoring Wells (November/December 2008)
MGW-1	MUNDELL Soil Gas Well

NG — Water Level as Measured on January 17, 2011 (gray boxes indicate groundwater elevation values not used for the creation of the Shallow Potentiometric Surface Map)

NG - Not Gauged

696 — Potentiometric Surface Equipotential Lines

NORTH

SCALE 0 200 feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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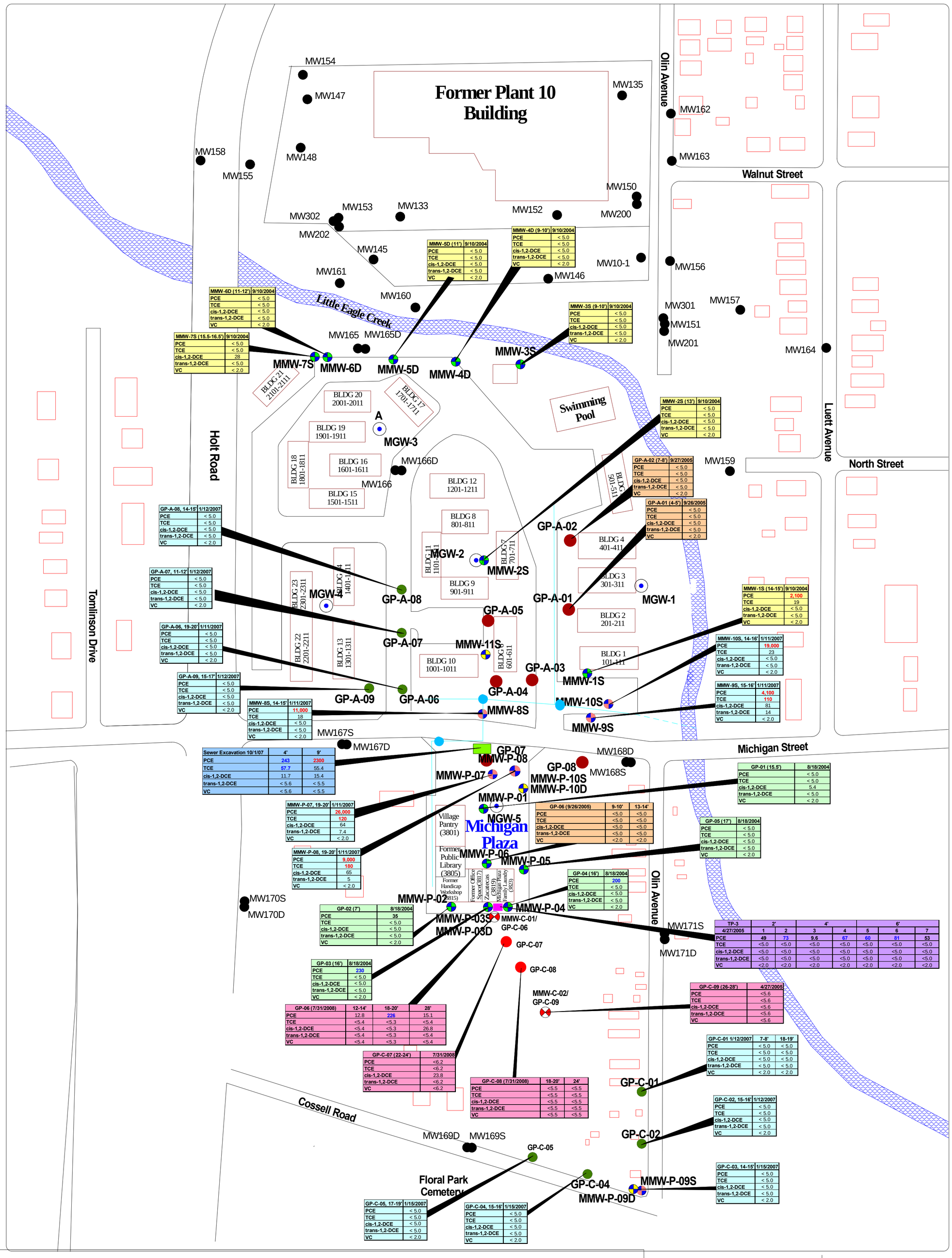
Project Number:	M01046
Drawing File:	Site Plan.skf
Date Prepared:	4/4/2011
Scale:	1"=200' ±

Shallow Potentiometric Surface Map January 17, 2011

Michigan Plaza
3801 - 3823 West Michigan Steet
Indianapolis, Indiana

FIGURE 3



LEGEND

- Mundell Test Pit (TP-3) Sampling Locations (April 2005)
- Sewer Excavation Sampling Locations (October 2007)
- Fence
- Sewer Line
- MMW-11S — MUNDELL Monitoring Wells (May-June 2007)
- MW160 — Keramida Monitoring Wells
- SS-P-01 — MUNDELL Sewer Sampling Locations/manholes (September & November 2005)
- GP-07 — MUNDELL Soil Boring Locations (September 2005)
- MMW-P-06 — MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
- GP-C-04 — MUNDELL Soil Boring Locations (January 2007)
- MMW-P-07 — MUNDELL Monitoring Wells (January 2007)
- MMW-C-01 — MUNDELL Monitoring Wells (July/August 2008)
- GP-C-06 — MUNDELL Soil Boring Locations (July/August 2008)

Boring ID (depth in feet)	
PCE	Tetrachloroethene (ug/kg)
TCE	Trichloroethene (ug/kg)
cis-DCE	cis-1,2-Dichlroethene (ug/kg)
VC	Vinyl Chloride (ug/kg)

NOTE:
Values in RED are above RISC Industrial Cleanup Goals and those in BLUE are above RISC Residential Cleanup Goals

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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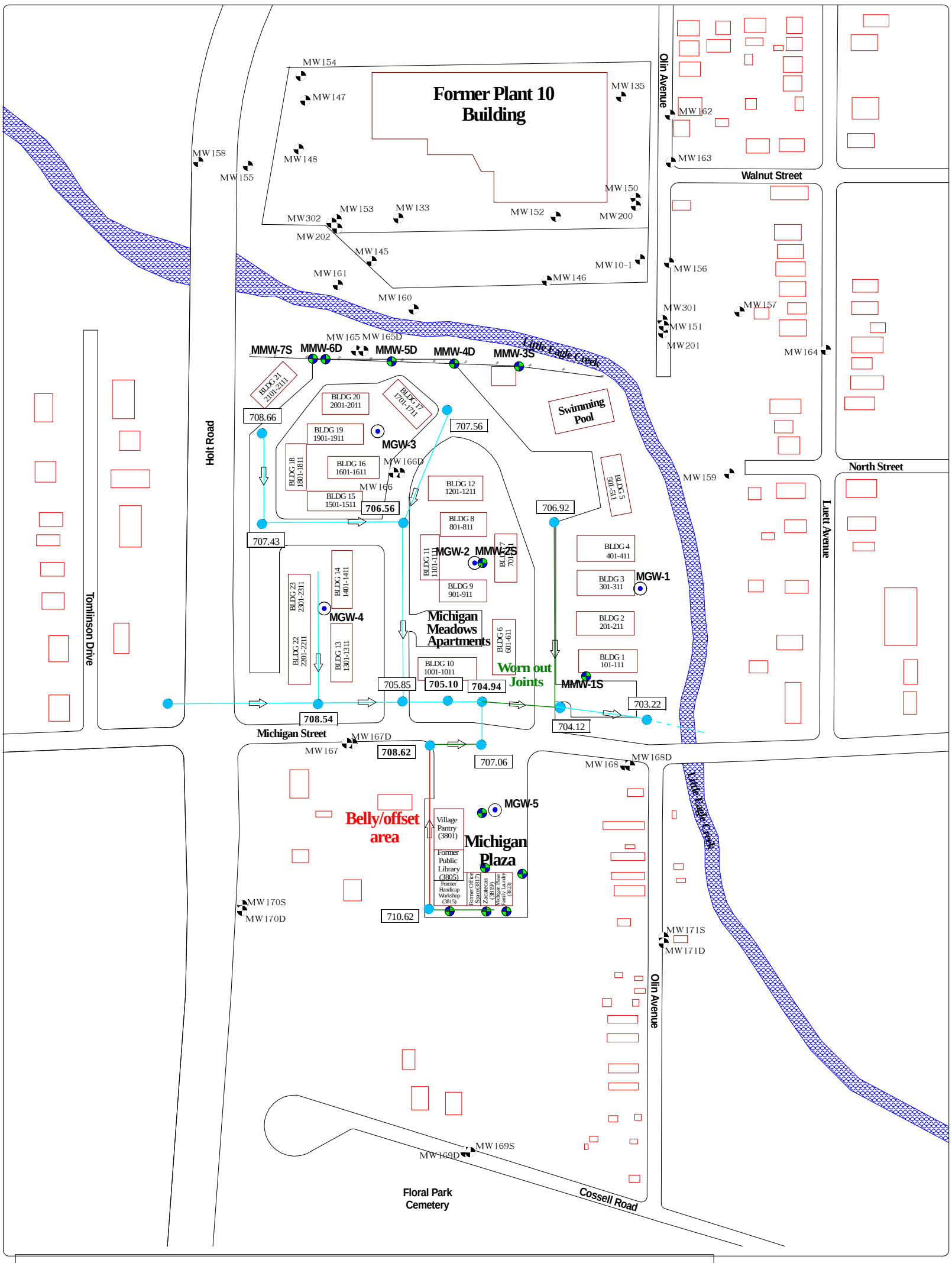
Project Number: M01046
Drawing File: Base Map.SKF
Date Prepared: 11/4/2008
Scale:

Soil Analytical Map
Cumulative
Michigan Plaza

3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
4



LEGEND

- Fence
- MW160 — Keramida Monitoring Wells
- MMW-P-05 — MUNDELL Monitoring Wells (September 2005)
- Approximate Sewer Manhole Locations
- GP-A-04 — MUNDELL Soil Boring Locations (September 2005)
- Sewer Line Location
- Belly/offset Area
- Worn out Joints

NORTH

SCALE 0 200 feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

708.62 **(Bold)** Invert elevations of sewer lines were surveyed by MUNDELL on 9/21/06 relative to Keramida Well MW-167S

710.62 (Normal Font) Invert elevations of sewer lines were extrapolated from as-built drawings obtained from the Department of Metropolitan Development. Elevation was extrapolated from design drawings by taking field verified survey elevations and adding elevation based on design slopes of individual sewer segments.

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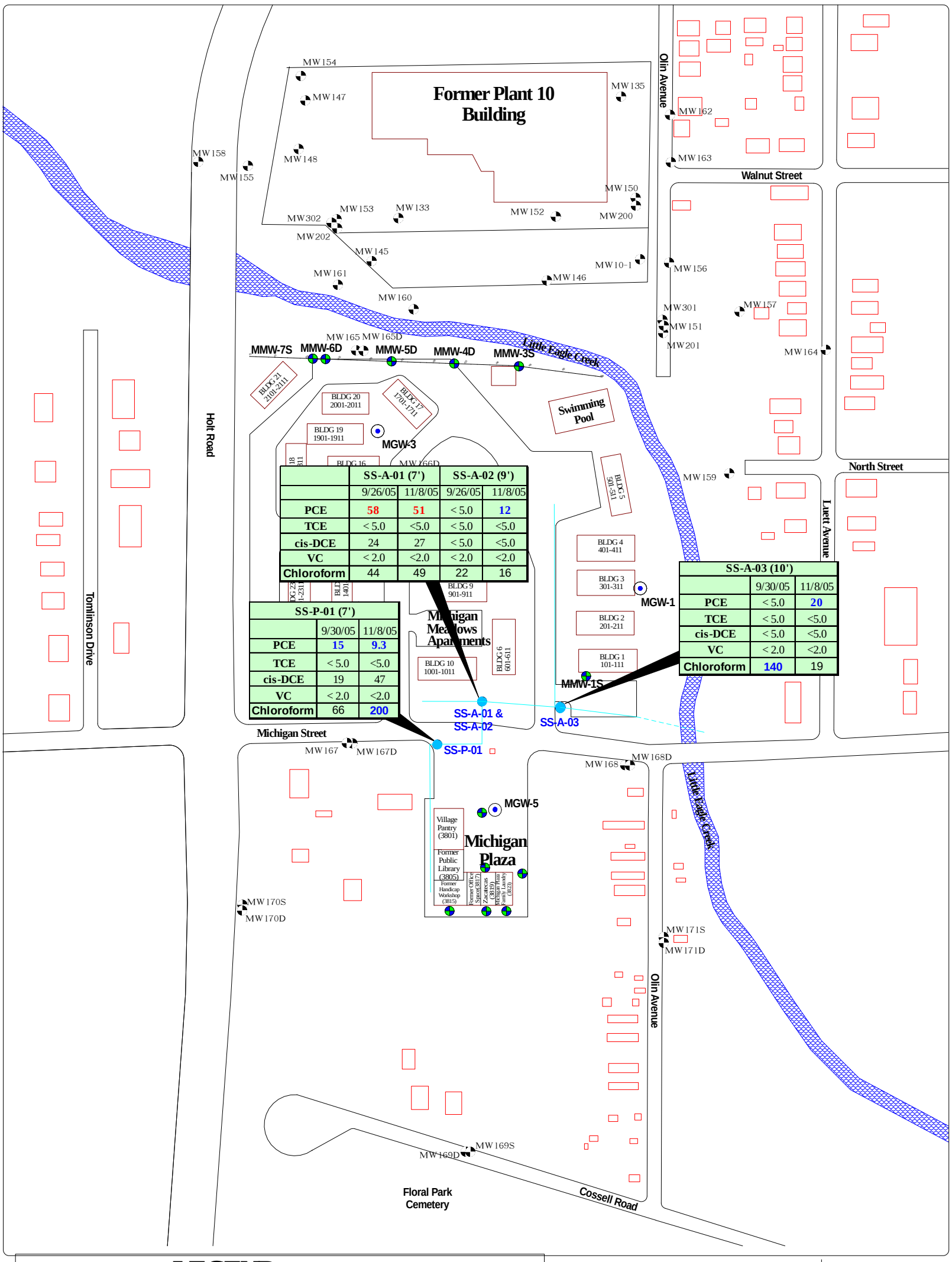
Drawing File: Base Map.SKF
Date Prepared: 9/21/06
Scale: 1"=200' ±

SEWER INVERT ELEVATIONS
Further Site Characterization
Michigan Plaza
3801-3823 West Michigan Avenue
Indianapolis, Indiana

FIGURE
5



	SS-A-01 (7')		SS-A-02 (9')	
	9/26/05	11/8/05	9/26/05	11/8/05
PCE	58	51	< 5.0	12
TCE	< 5.0	<5.0	< 5.0	<5.0
cis-DCE	24	27	< 5.0	<5.0
VC	< 2.0	<2.0	< 2.0	<2.0
Chloroform	44	49	22	16

SS-P-01 (7')		
	9/30/05	11/8/05
PCE	15	9.3
TCE	< 5.0	<5.0
cis-DCE	19	47
VC	< 2.0	<2.0
Chloroform	66	200

SS-A-03 (10')		
	9/30/05	11/8/05
PCE	< 5.0	20
TCE	< 5.0	<5.0
cis-DCE	< 5.0	<5.0
VC	< 2.0	<2.0
Chloroform	140	19

LEGEND

- Fence
- MW160 — Keramida Monitoring Wells
- MMW-P-05 — MUNDELL Monitoring Wells (September 2005)
- SS-P-01 — MUNDELL Sewer Sampling Locations (September 2005)
- GP-A-04 — MUNDELL Soil Boring Locations (September 2005)
- Sewer Line Location

Sample ID (depth in feet)	
PCE	Tetrachloroethene (ug/l)
TCE	Trichloroethene (ug/l)
cis-DCE	cis-1,2-Dichlroethene (ug/l)
VC	Vinyl Chloride (ug/l)
Chloroform	Chloroform (ug/l)

NORTH

SCALE 0 200 feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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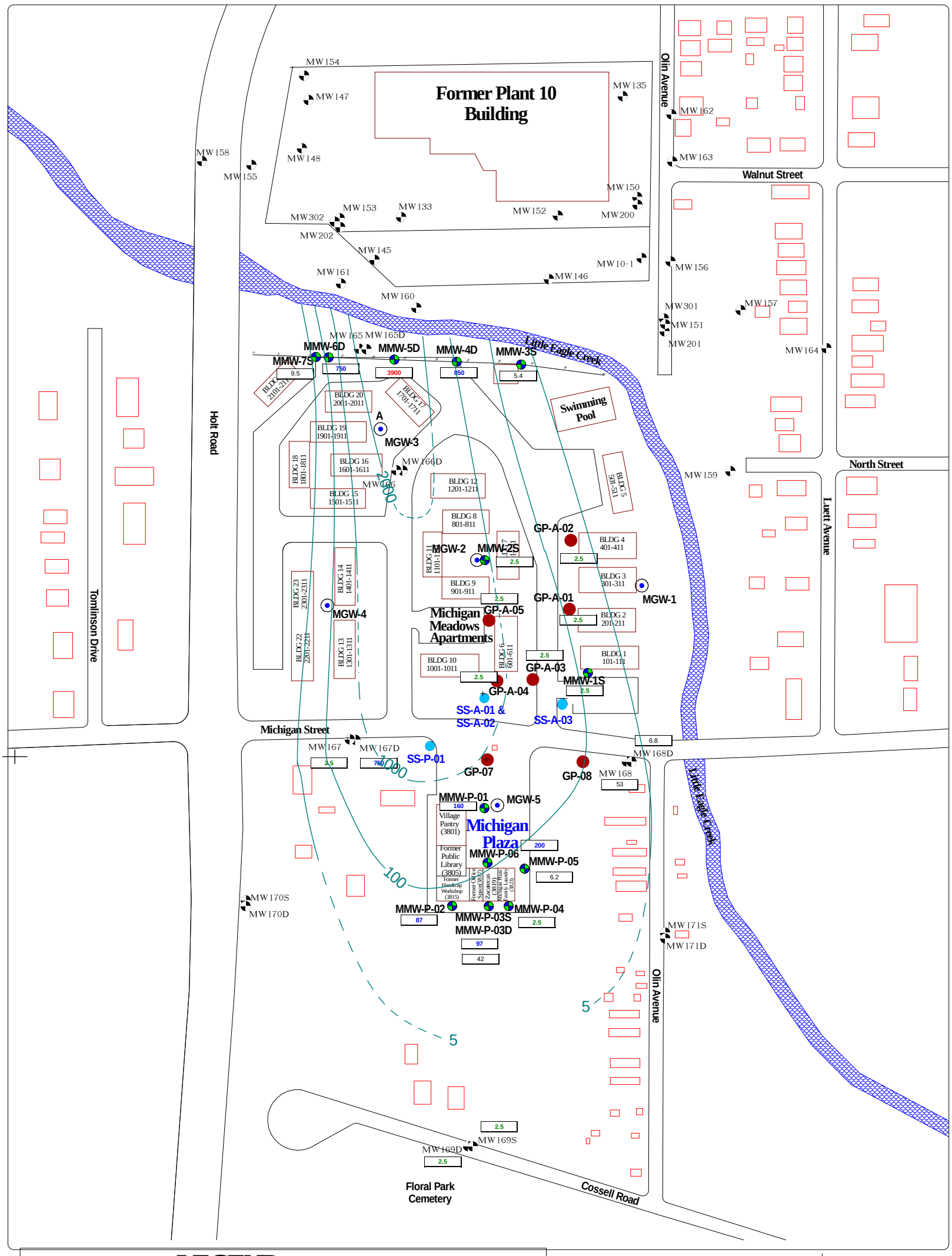
Project Number: M01046
Drawing File: Base Map.SKF
Date Prepared: 11/03/05
Scale: 1"=200' ±

SEWER ANALYTICAL RESULTS
Further Site Characterization
Michigan Plaza
3801-3823 West Michigan Avenue
Indianapolis, Indiana

FIGURE
6



LEGEND

- Fence
- MW160 — Keramida Monitoring Wells
- MMW-5D — MUNDELL Monitoring Wells (August 2004)
- SS-P-01 — MUNDELL Sewer Sampling Locations (September & November 2005)
- GP-A-04 — MUNDELL Soil Boring Locations (September 2005)
- MMW-P-06 — MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
- cis-1,2-DCE Concentration in groundwater, ppb
- 9.5 — cis-1,2-DCE Concentration, ppb

NORTH

SCALE 0 200 feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc. Project No. 2829 March 13, 2002

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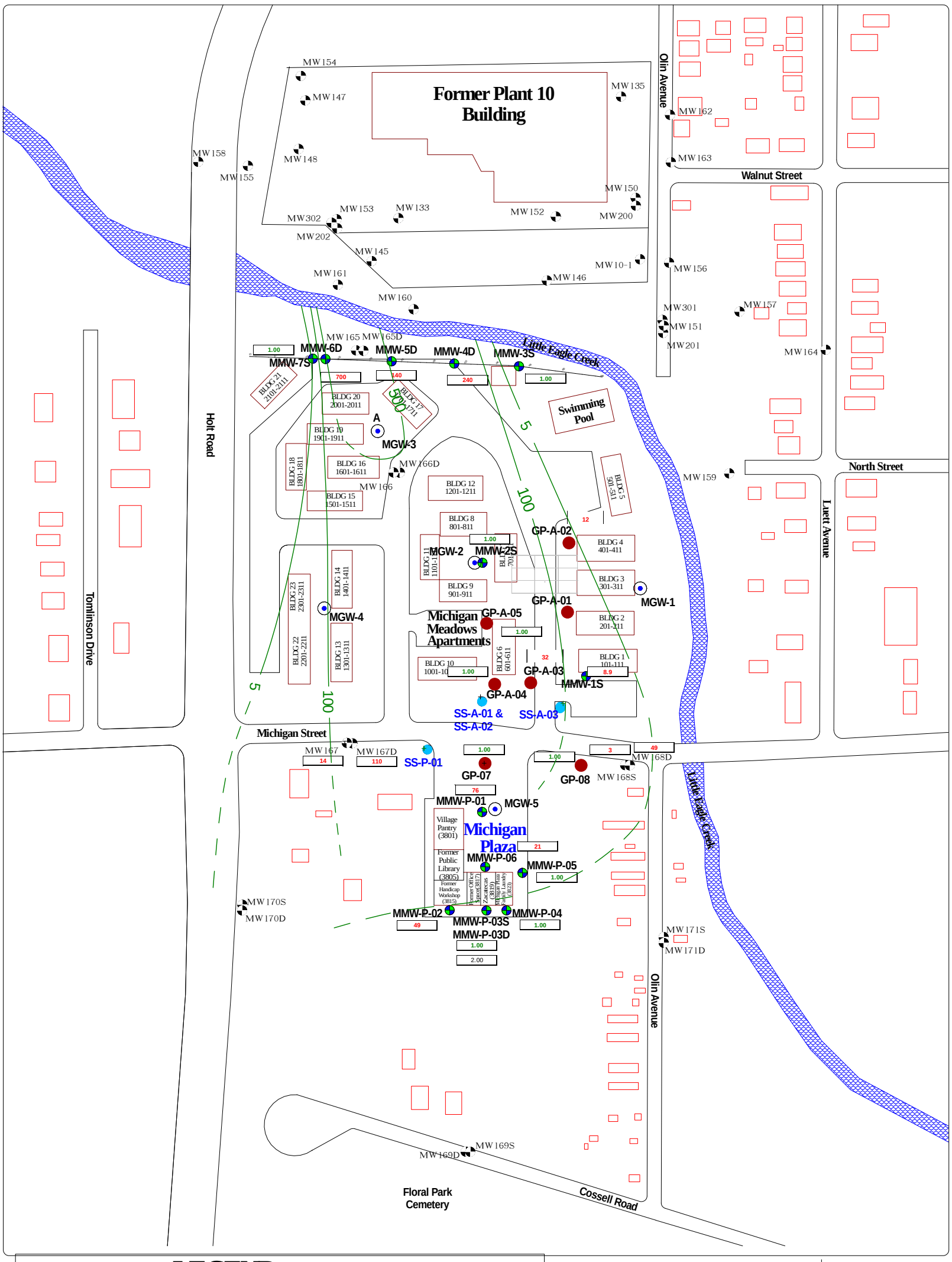
Project Number: M01046
Drawing File: Base Map.SKF
Date Prepared: 11/03/05
Scale: 1"=200' ±

HORIZONTAL EXTENT OF cis-1,2-DCE IMPACTS TO GROUNDWATER (DEEP SYSTEM)
Further Site Characterization
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
7



LEGEND

- Fence
- MW160 — Keramida Monitoring Wells
- MMW-5D — MUNDELL Monitoring Wells (August 2004)
- SS-P-01 — MUNDELL Sewer Sampling Locations (September & November 2005)
- GP-A-04 — MUNDELL Soil Boring Locations (September 2005)
- MMW-P-06 — MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
- Vinyl Chloride Concentration in groundwater, ppb
- 49 — Vinyl Chloride Concentration, ppb

NORTH

SCALE 0 200 feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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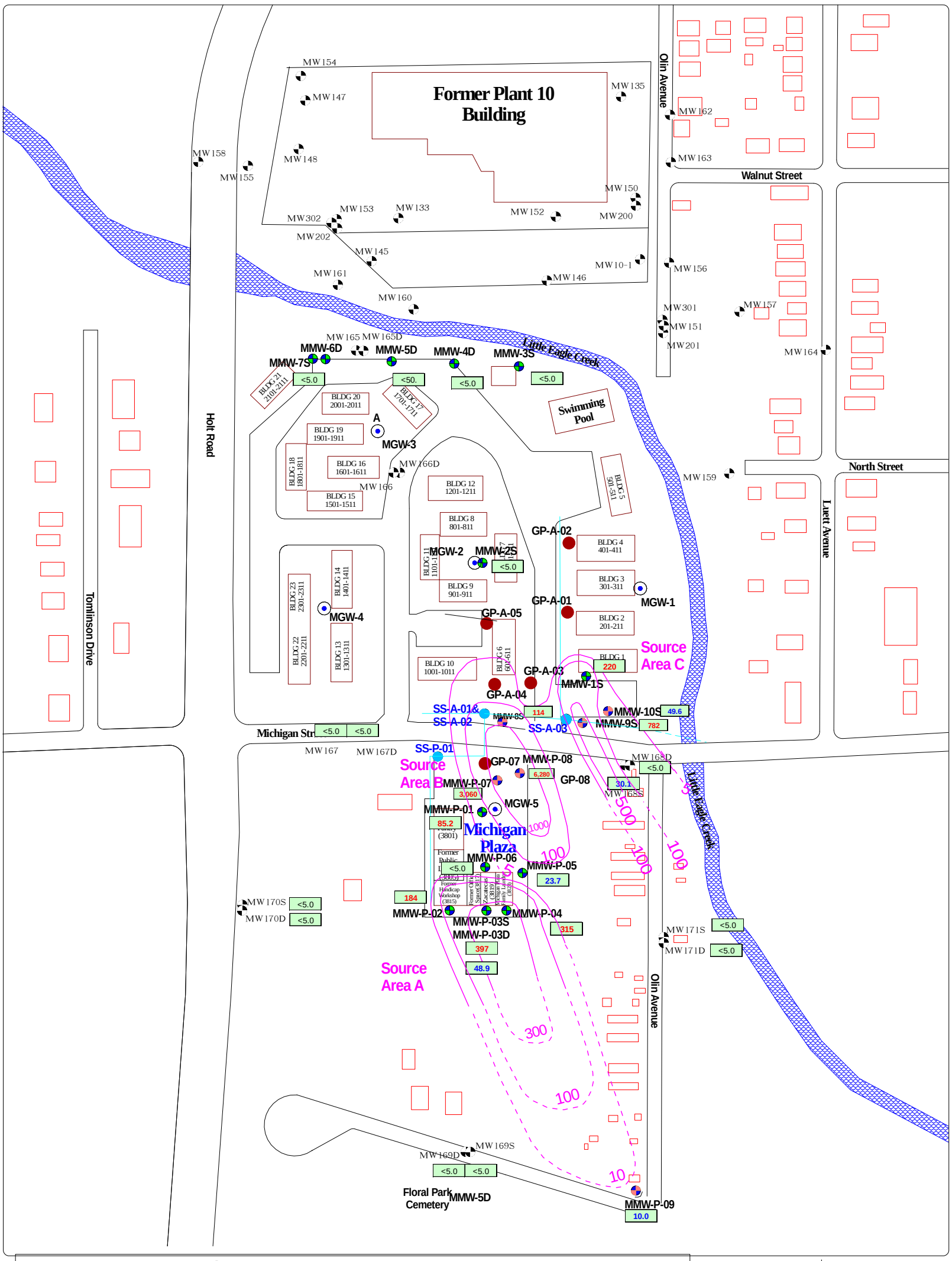
Project Number: M01046
Drawing File: Base Map.SKF
Date Prepared: 12/30/05
Scale: 1"=200' ±

HORIZONTAL EXTENT OF VC IMPACTS TO GROUNDWATER (DEEP SYSTEM)
Further Site Characterization
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
8



LEGEND

- Fence
- MW160 — Keramida Monitoring Wells
- SS-P-01 — MUNDELL Sewer Sampling Locations (September & November 2005)
- GP-07 — MUNDELL Soil Boring Locations (September 2005)
- MMW-P-06 — MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
- MMW-P-07 — MUNDELL Monitoring Wells (January 2007)
- Total PCE concentration in groundwater, ppb
- Sewer Line Location
- 10.0 — Total PCE concentration in groundwater, ppb

NOTE:
Values in RED are above RISC Industrial Cleanup Goals and those in BLUE are above RISC Residential Cleanup Goals

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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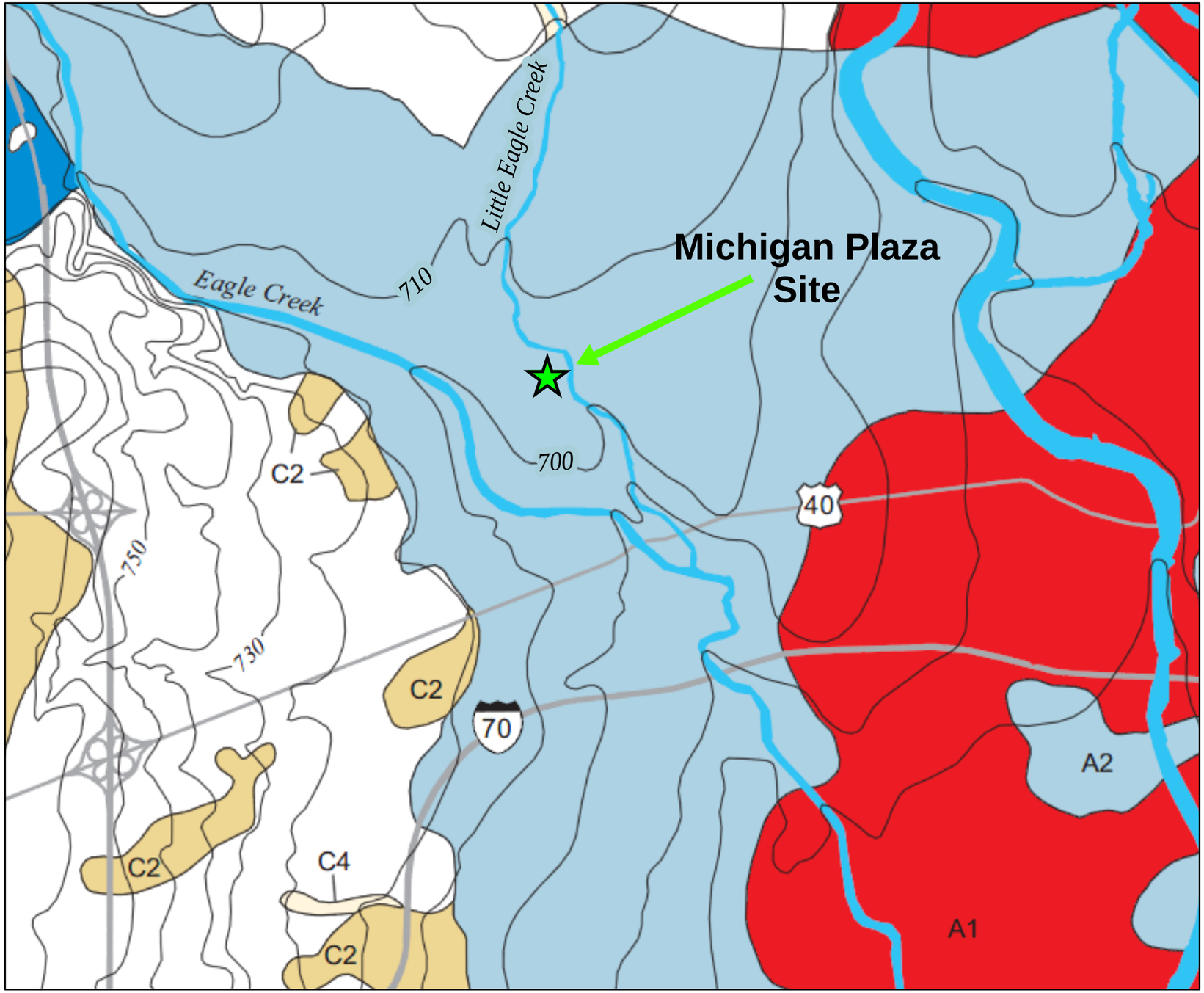
Project Number: M01046
Drawing File: Base Map.SKF
Date Prepared: 4/02/07
Scale: 1"=200' ±

HORIZONTAL EXTENT OF PCE IMPACTS TO GROUNDWATER (SHALLOW SYSTEM)
Further Site Characterization
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
9



Explanation

Potentiometric Surface

Generalized contour representing line of equal static water level elevation in the shallow aquifer system associated with the pre-Wisconsin surface and overlying Wisconsin deposits. Contour interval: 10 feet.

Hydrogeologic Settings

A1 — Thick sections of unconfined sand and gravel interstratified with a few small widely scattered till units. This setting characterizes the axis of the White River Valley, which is the regional discharge area for all aquifers in the county.

A2 — Variable thickness of outwash overlying complexly interbedded sand and gravel and till. Thick unbroken sections of sand and gravel are present locally. Sand and gravel units at depth are typically confined or semi confined by bodies of till, whereas the upper portions of the system are commonly unconfined.

A3 — Similar to setting A2 but occurs in narrow bands along the valleys of the larger streams that cross upland areas away from the White River. The potentiometric surface slopes strongly into the valley axis.

C2 — Similar to setting C1 but the sand and gravel is consistently confined by upper sequence till greater than 10 feet thick and commonly more than 20 feet thick.

C4 — Valleys of small upland streams formed chiefly in till locally having exhumed sand and gravel valley floor. Some alluvium is usually present in floodplains.

Map unit	Water table (general; feet below surface)	Recharge/Discharge	Recharge potential	Sensitivity to contamination
A1	5 to 20	regional discharge area	very high for shallow unconfined units	very high
A2	10 to 25 (unconfined)	regional discharge for deep aquifers; local recharge for shallow aquifers	very high for shallow parts of the system	deep confined units—low shallow unconfined—high
A3	5 to 20	local discharge	very high for shallow parts of the system	high to moderately low
B1	greater than 50	local recharge	high	high
B2	25 to 75; locally perched	local recharge	moderate to high	low to moderate
C1	less than 10	local recharge	moderate; higher in depressions	deep confined units—low shallow unconfined—high
C2	within a few feet of land surface	local recharge	low	low
C3	less than 10	local recharge	low	low
C4	same as surface water bodies	local discharge	low	low
C5	greater than 25; locally perched	local recharge	moderate	low to high
C6		recharge and discharge	moderate	moderate
C7	greater than 10 feet below till-confining unit	local recharge	moderate to high	moderate to high

SITE LOCATION

Taken from: *Hydrogeologic Framework of Marion County, Indiana, Potentiometric Surface and Hydrogeologic Settings of theShallow Aquifer System* by Anthony H. Flemming, Steven E. Brown and Victoria R. Ferguson. 2000.

N

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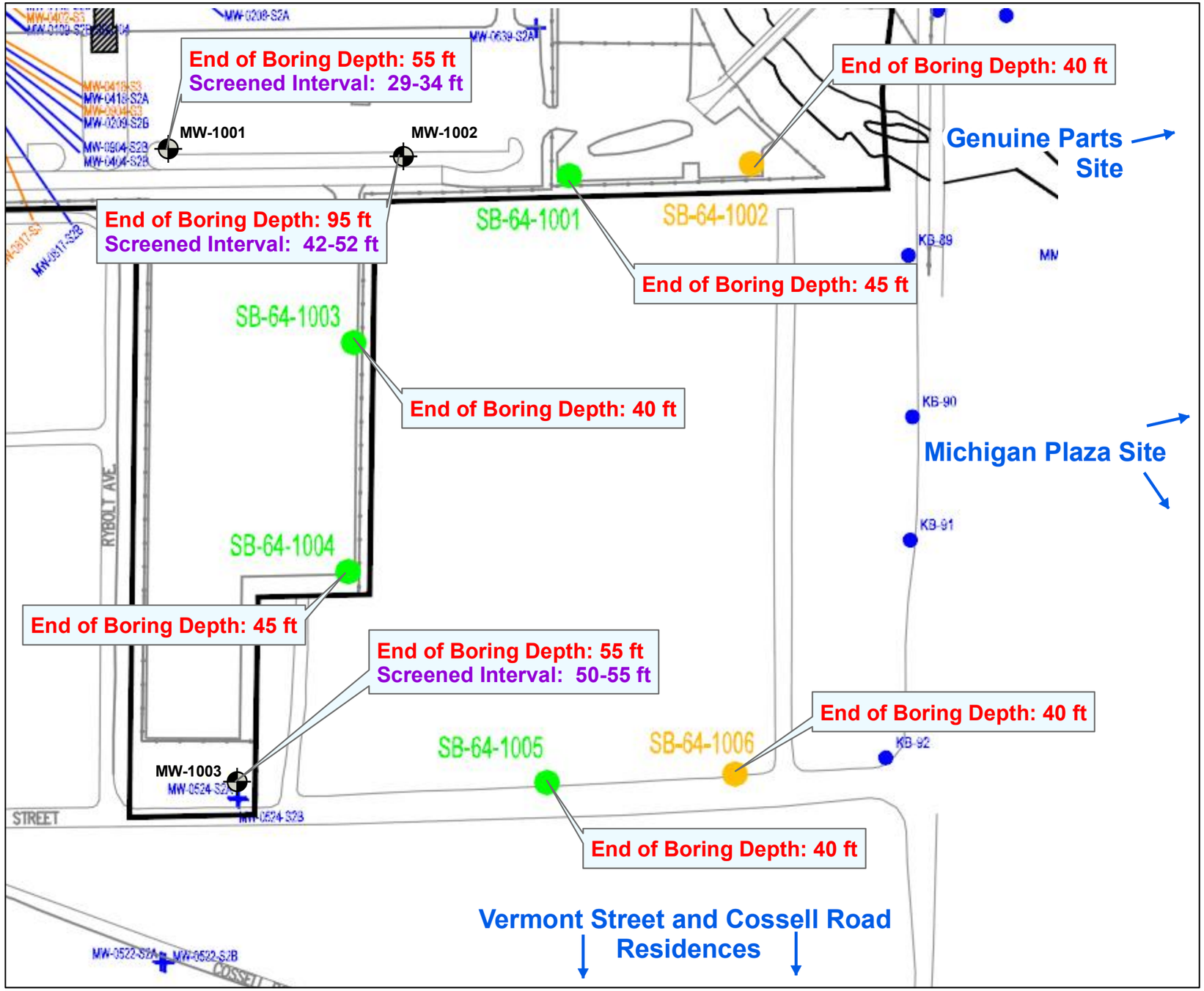
Project Number: M01046	**Drawn by:** SEW
File: HydrogeoFrmwk.mxd	**Approved by:** SEW
Date Prepared: 3/18/2011	

Potentiometric Surface and Hydrogeologic Settings of the Shallow Aquifer System

Michigan Plaza Shopping Center and Michigan Plaza Apartments
3801 - 3823 West Michigan Street
Indianapolis, Indiana

Figure 10



LEGEND

- Allison Transmission Monitoring Well Location
- Allison Transmission Soil Boring Locations

SITE LOCATION

Taken from: *Supplement No. 2 to RCRA Facility Investigation: Vermont Street Investigation Data Report* by Arcadis. May 2010.

N

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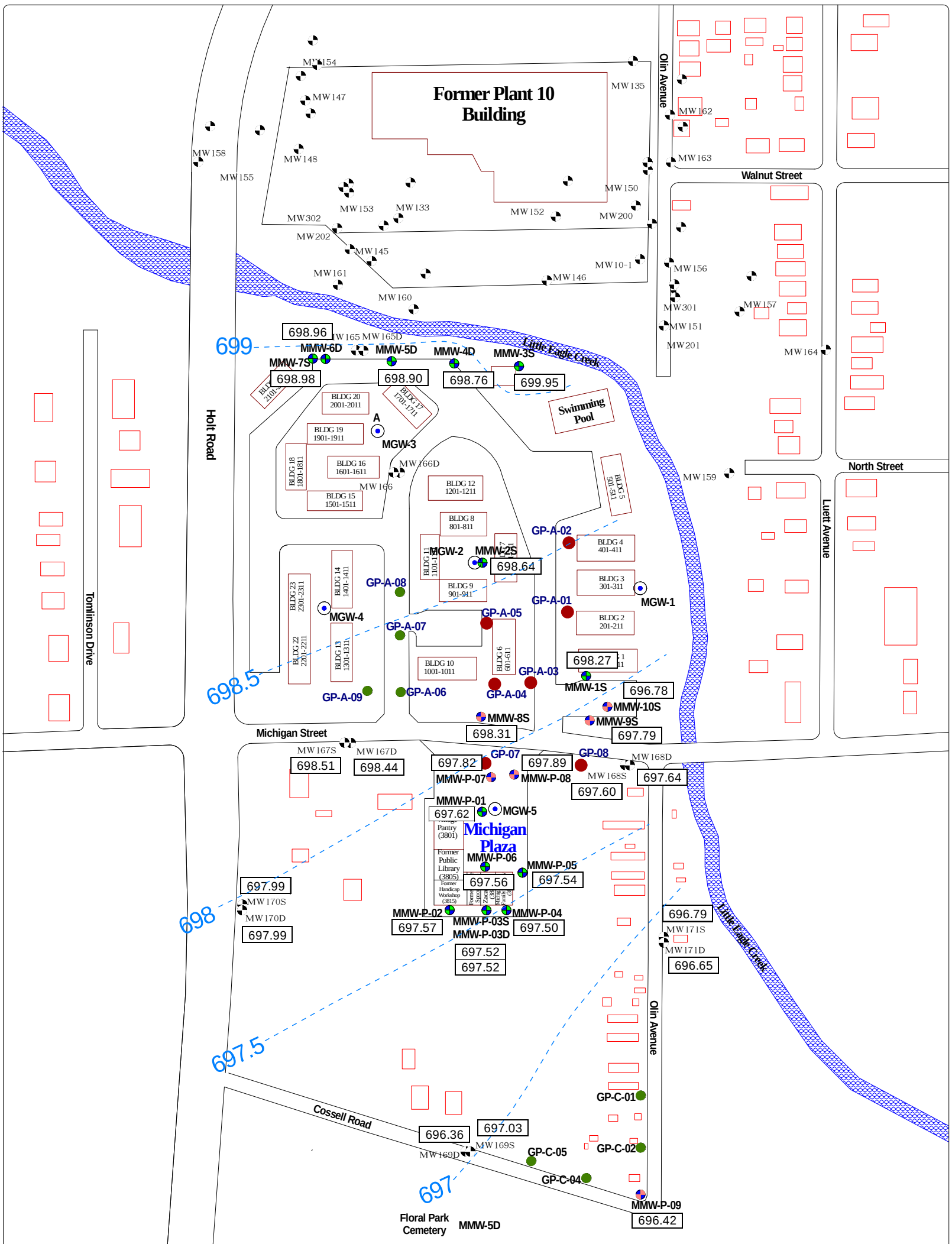
Project Number: M01046	**Drawn by:** SEW
File: ArcadisWellDepths.mxd	**Approved by:** SEW
Date Prepared: 3/18/2011	

Allison Transmission 2010 Soil Investigation
Soil Boring and Monitoring Well
Installation and Construction Details

Michigan Plaza Shopping Center and Michigan Plaza Apartments
3801 - 3823 West Michigan Street
Indianapolis, Indiana

Figure 11



LEGEND

———	Fence
MW160	Keramida Monitoring Wells
SS-P-01	MUNDELL Sewer Sampling Locations (September & November 2005)
GP-07	MUNDELL Soil Boring Locations (September 2005)
MMW-P-06	MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
GP-C-05	MUNDELL Soil Boring Locations (January 2007)
MMW-P-07	MUNDELL Monitoring Wells (January 2007)
697.03	Water Level as Measured on February 21, 2007
699 - - - - -	Potentiometric Surface Equal Potential Lines

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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Consulting Professionals for the Earth & Environment
429 East Vermont Street, Suite 200
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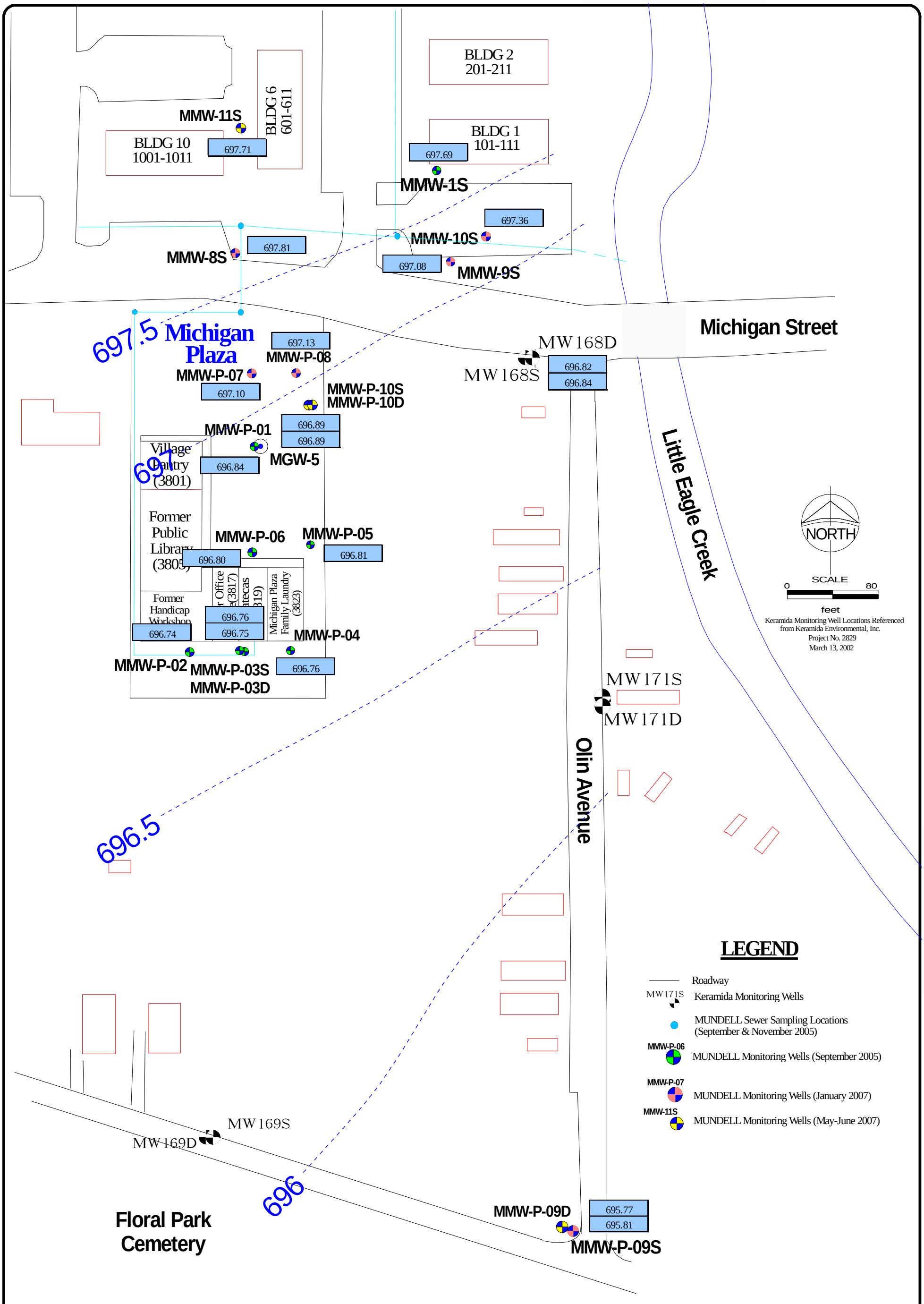
317-630-9060, fax 317-630-9065

Project Number:	M01046
Drawing File:	Base Map.SKF
Date Prepared:	3/16/07
Scale:	1"=200' ±

Shallow Potentiometric Surface Map
February 21, 2007
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12a



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317-630-9060, fax 317-630-9065

Project Number:	M01046
Drawing File:	Basemap_rev2
Date Prepared:	11/8/07
Scale:	1"=80' ±

POTENTIOMETRIC SURFACE MAP
June 14, 2007
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12b

BLDG 2
201-211

BLDG 6
601-611

BLDG 10
1001-1011

BLDG 1
101-111

MMW-11S
697.26

697.30
MMW-1S

697.06
MMW-10S

MMW-8S
697.34

696.64
MMW-9S

697

Michigan Plaza

696.46
MMW-P-08
696.61
MMW-P-07

696.5

MMW-P-10S
MMW-P-10D
696.29
696.29

MMW-P-01
696.10
MGW-5

Village Pantry (3801)

Former Public Librar (3805)

MMW-P-06
695.93

MMW-P-05
695.98

Former Handicap Workshop

Office (3817)

tecas 19)

n Plaza Family Laundry (3823)

695.76

695.80

695.82

MMW-P-04
695.78

MMW-P-02

MMW-P-03S
MMW-P-03D

696

696.45
696.45
MW168D
MW168S

Michigan Street

Little Eagle Creek

Olin Avenue

NORTH

SCALE
0 80
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

MW171S
MW171D

LEGEND

- Roadway
- MW171S — Keramida Monitoring Wells
- MUNDELL Sewer Sampling Locations (September & November 2005)
- MMW-P-06 — MUNDELL Monitoring Wells (September 2005)
- MMW-P-07 — MUNDELL Monitoring Wells (January 2007)
- MMW-11S — MUNDELL Monitoring Wells (May-June 2007)
- Potentiometric Surface Contours, in feet
- 695.19 — Groundwater Elevation, in feet

695.5

MW169S
MW169D

Floral Park Cemetery

MMW-P-09D
694.86
695.19
MMW-P-09S

695

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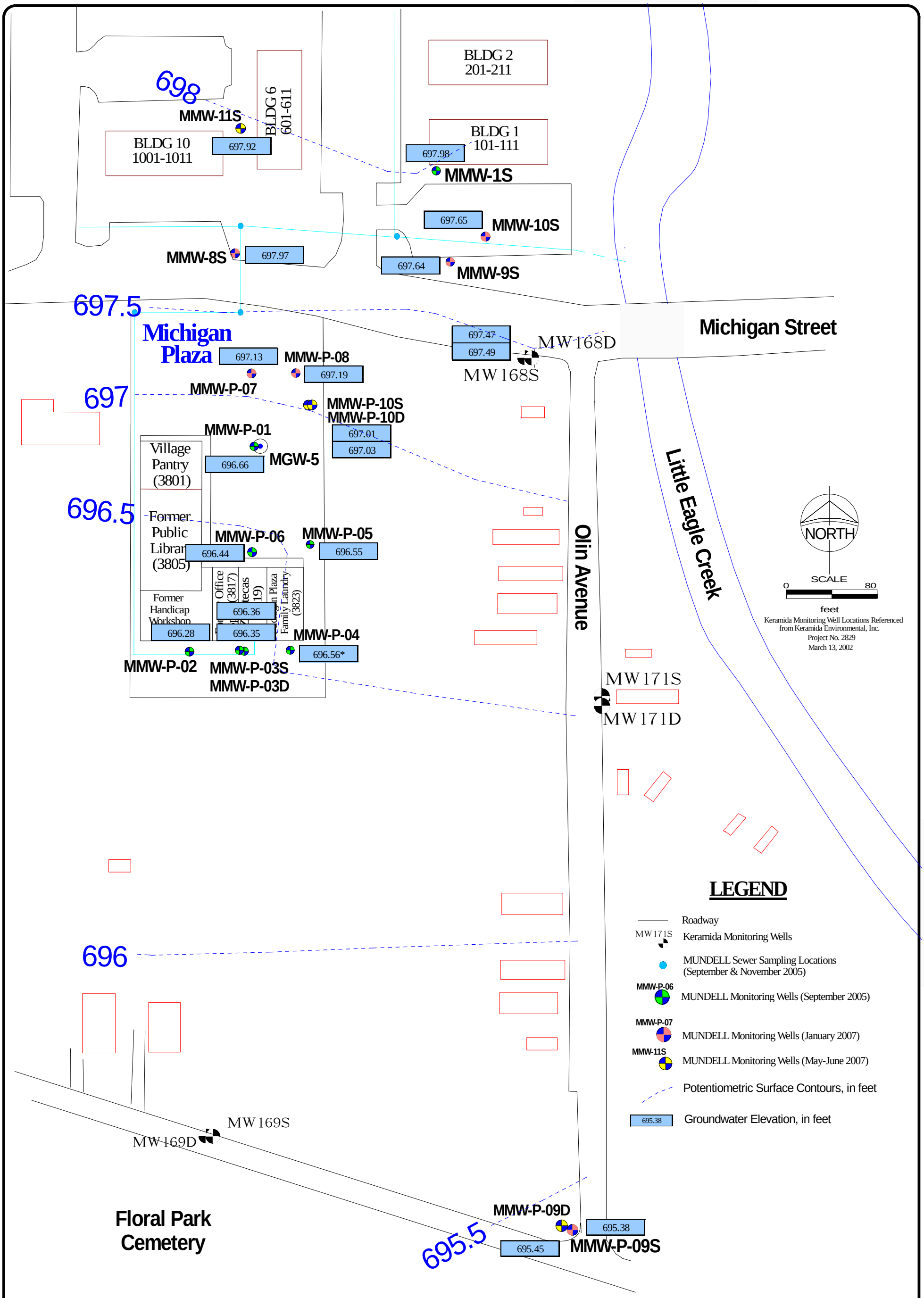
Consulting Professionals for the Earth & Environment
429 East Vermont Street, Suite 200
Indianapolis, Indiana 46202-3688
317-630-9060, fax 317-630-9065

Project Number: M01046
Drawing File: Basemap_rev2
Date Prepared: 11/6/07
Scale: 1"=80' ±

POTENTIOMETRIC SURFACE MAP
September 19, 2007
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12c



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Indianapolis, Indiana 46219
317-630-9060, fax 317-630-9065

Project Number:	M01046
Drawing File:	Basemap_rev2
Date Prepared:	2/4/08
Scale:	1"=80' ±

POTENTIOMETRIC SURFACE MAP
December, 2007
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12d

699.5

MMW-11S

699.51

BLDG 10
1001-1011

BLDG 6
601-611

BLDG 2
201-211

BLDG 1
101-111

699.51

MMW-1S

699.15

MMW-10S

MMW-8S

699.44

698.9

MMW-9S

699

Michigan Street

Michigan Plaza

698.61

MMW-P-08

698.78

698.96

699.06

MW168D

MW168S

698.5

MMW-P-07

MMW-P-10S
MMW-P-10D

698.94

698.59

MMW-P-01

698.34

MGW-5

Village Pantry (3801)

Former Public Library (3805)

MMW-P-06

698.16

MMW-P-05

698.20

Former Handicap Workshop

Office (3817)

Plaza Family Laundry (3823)

698.16

698.10

698.17

MMW-P-04

696.56*

MMW-P-02

MMW-P-03S
MMW-P-03D

Little Eagle Creek

Olin Avenue

NORTH

SCALE

0 80

feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

MW171S

MW171D

698.02

697.47

698

LEGEND

- Roadway
- MW171S — Keramida Monitoring Wells
- MUNDELL Sewer Sampling Locations (September & November 2005)
- MMW-P-06 — MUNDELL Monitoring Wells (September 2005)
- MMW-P-07 — MUNDELL Monitoring Wells (January 2007)
- MMW-11S — MUNDELL Monitoring Wells (May-June 2007)
- Potentiometric Surface Contours, in feet
- 696.76 — Potentiometric water level, in feet
- 696.88 — Potentiometric water level, not used interpolation

697.5

MW169S

MW169D

697.44

696.75

Floral Park Cemetery

MMW-P-09D

696.76

696.88

MMW-P-09S

697

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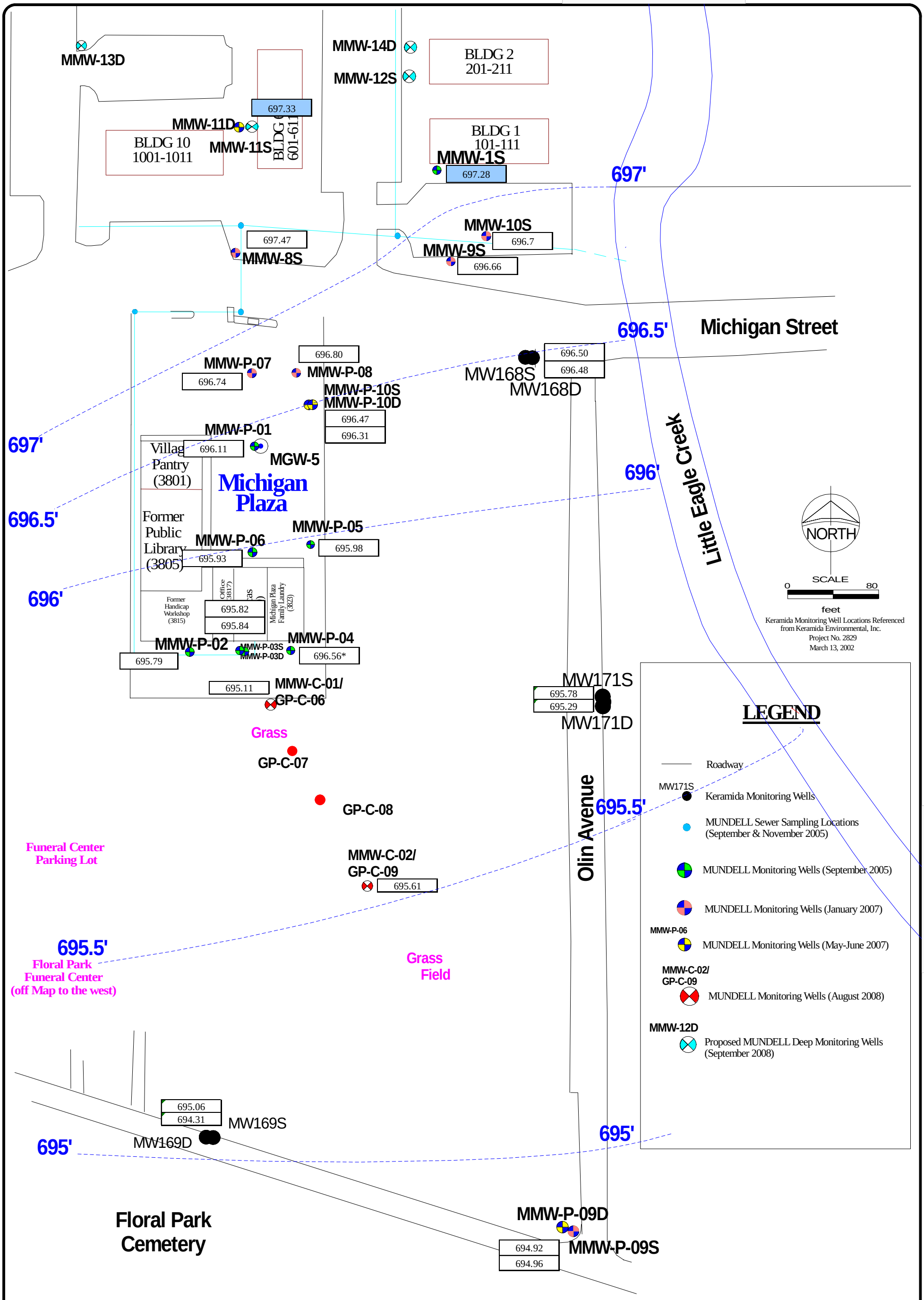
Project Number: M01046
Drawing File: Basemap_rev2
Date Prepared: 4/16/08
Scale: 1"=80' ±

POTENTIOMETRIC SURFACE MAP
March 21, 2008
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12e



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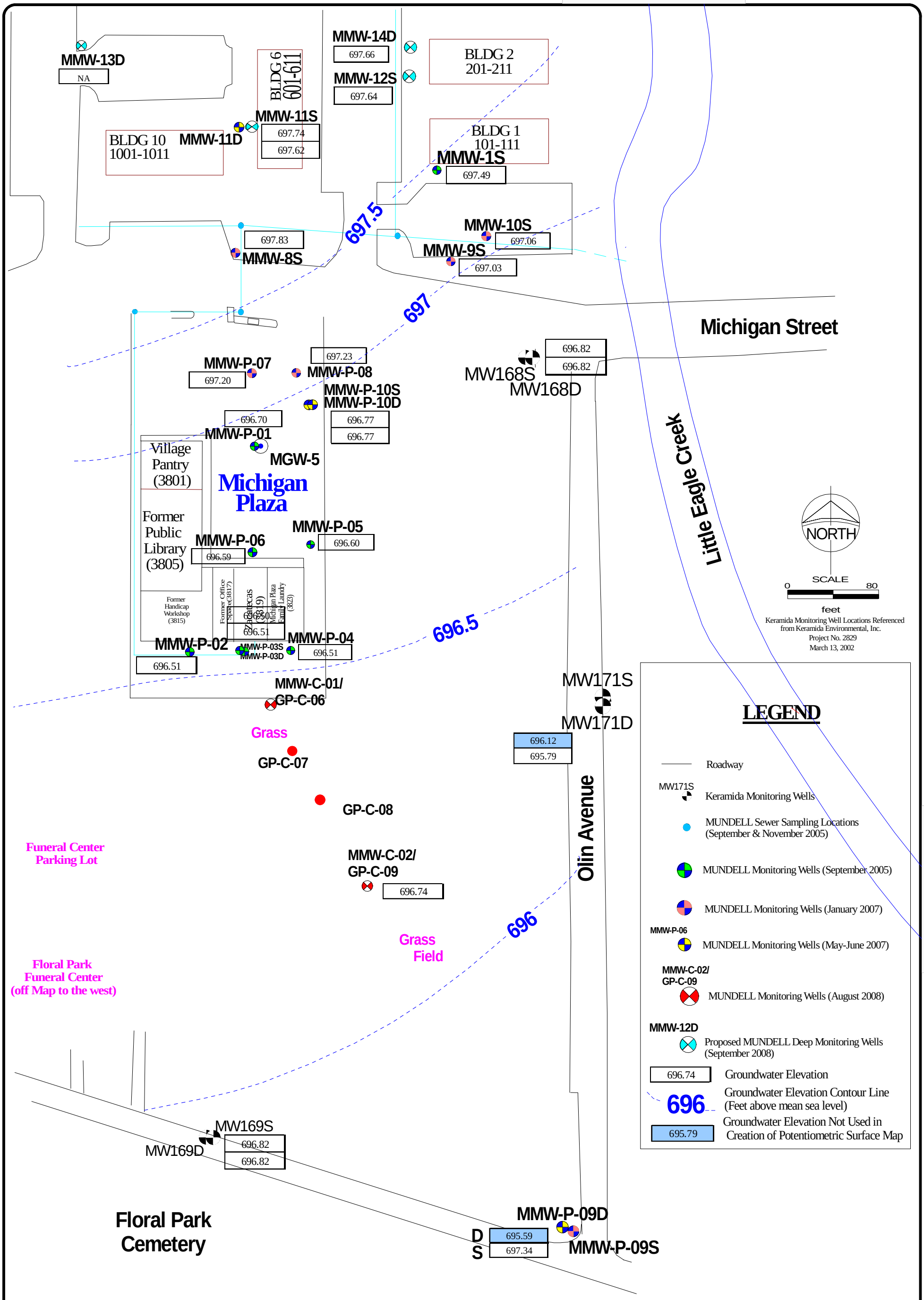
Project Number:	M01046
Drawing File:	
Date Prepared:	6/2/09
Scale:	1"=80'

Potentiometric Surface Map (shallow)
November 19 - 20, 2008
Fourth Quarter 2008
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12f



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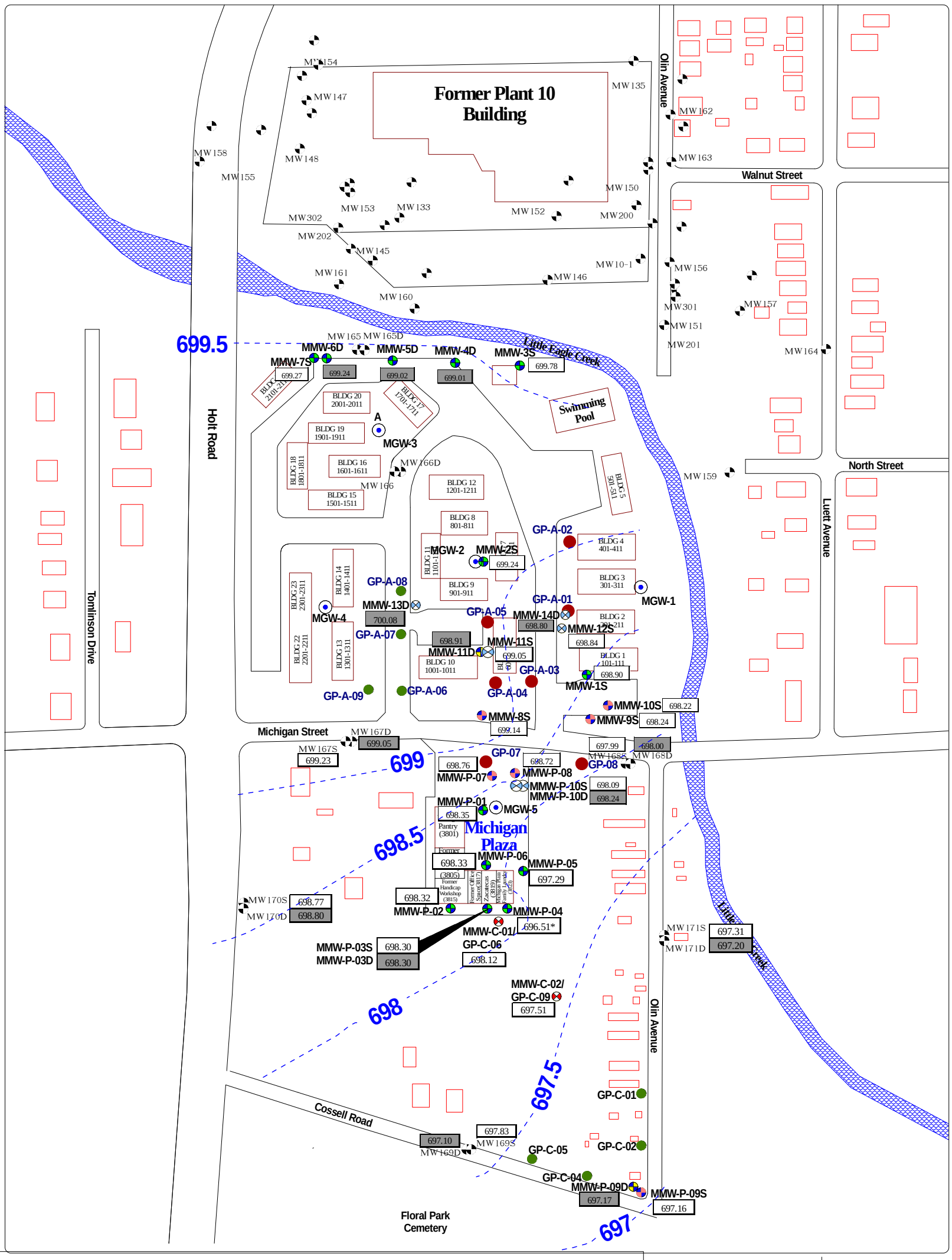
Project Number:	M01046
Drawing File:	
Date Prepared:	7/27/09
Scale:	1"=80'

Potentiometric Surface Map
First Quarter 2009
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12g



LEGEND

———	Fence
MW160	Keramida Monitoring Wells
SS-P-01	MUNDELL Sewer Sampling Locations (September & November 2005)
GP-07	MUNDELL Soil Boring Locations (September 2005)
MMW-P-06	MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
GP-C-05	MUNDELL Soil Boring Locations (January 2007)
MMW-P-07	MUNDELL Monitoring Wells (January 2007)
MMW-P-09D	MUNDELL Monitoring Wells (May-June 2007)
MMW-C-01/ GP-C-06 MMW-11S	MUNDELL Monitoring Wells (August 2008) MUNDELL Monitoring Wells (September 2008)
697.03	Water Level as Measured on November 2, 2009 (gray boxes indicate groundwater elevation values not used for the creation of the Potentiometric Surface Map)
699	Potentiometric Surface Equal Potential Lines

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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Consulting Professionals for the Earth & Environment
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Indianapolis, Indiana 46219-6406
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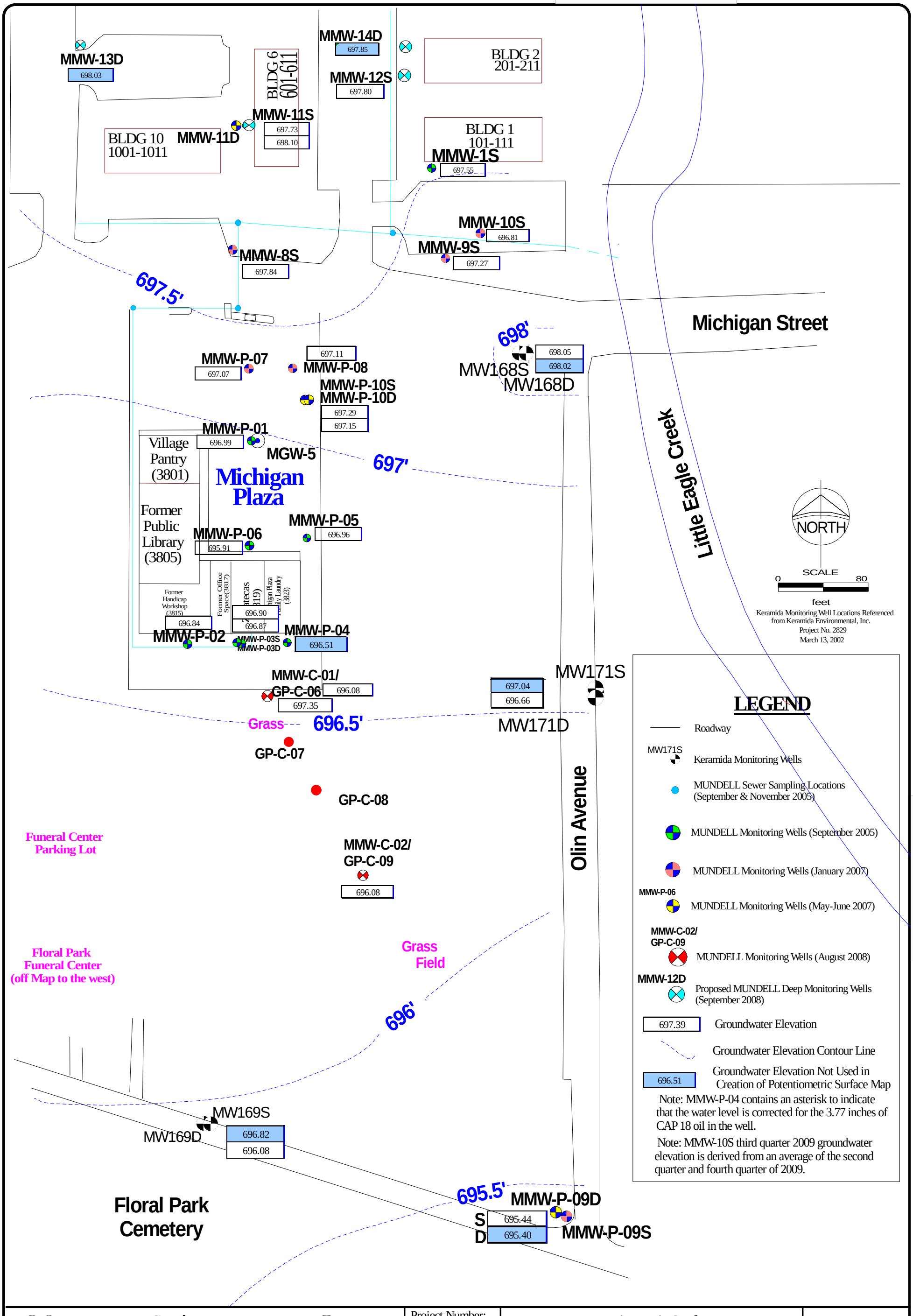
Project Number: M01046
Drawing File: Base Map.SKF
Date Prepared: 12/29/09
Scale: 1"=200' ±

Shallow Potentiometric Surface Map
June 15, 2009
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12h



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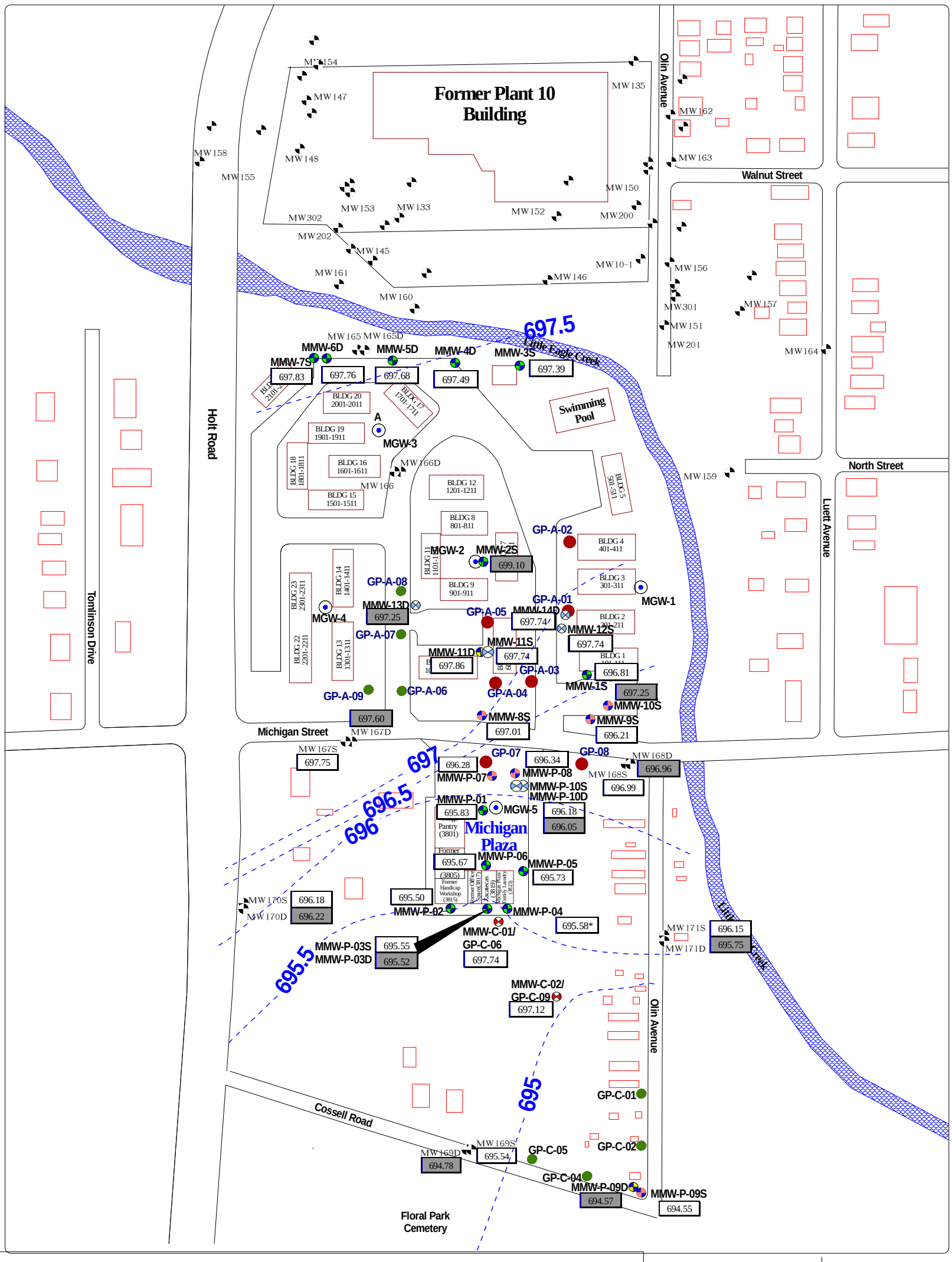
Consulting Professionals for the Earth & Environment
110 South Downey Avenue
Indianapolis, Indiana 46219
317-630-9060, fax 317-630-9065

Project Number: M01046	
Drawing File:	
Date Prepared: 7/27/09	
Scale: 1"=80'	

Potentiometric Surface Map
Third Quarter 2009
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12i



LEGEND

———	Fence
MW160	Keramida Monitoring Wells
SS-P-01	MUNDELL Sewer Sampling Locations (September & November 2005)
GP-07	MUNDELL Soil Boring Locations (September 2005)
MMW-P-06	MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
GP-C-05	MUNDELL Soil Boring Locations (January 2007)
MMW-P-07	MUNDELL Monitoring Wells (January 2007)
MMW-P-09D	MUNDELL Monitoring Wells (May-June 2007)
MMW-C-01/ GP-C-06	MUNDELL Monitoring Wells (August 2008)
MMW-11S	MUNDELL Monitoring Wells (September 2008)
697.03	Water Level as Measured on November 2, 2009 (gray boxes indicate groundwater elevation values not used for the creation of the Potentiometric Surface Map)
699	Potentiometric Surface Equal Potential Lines

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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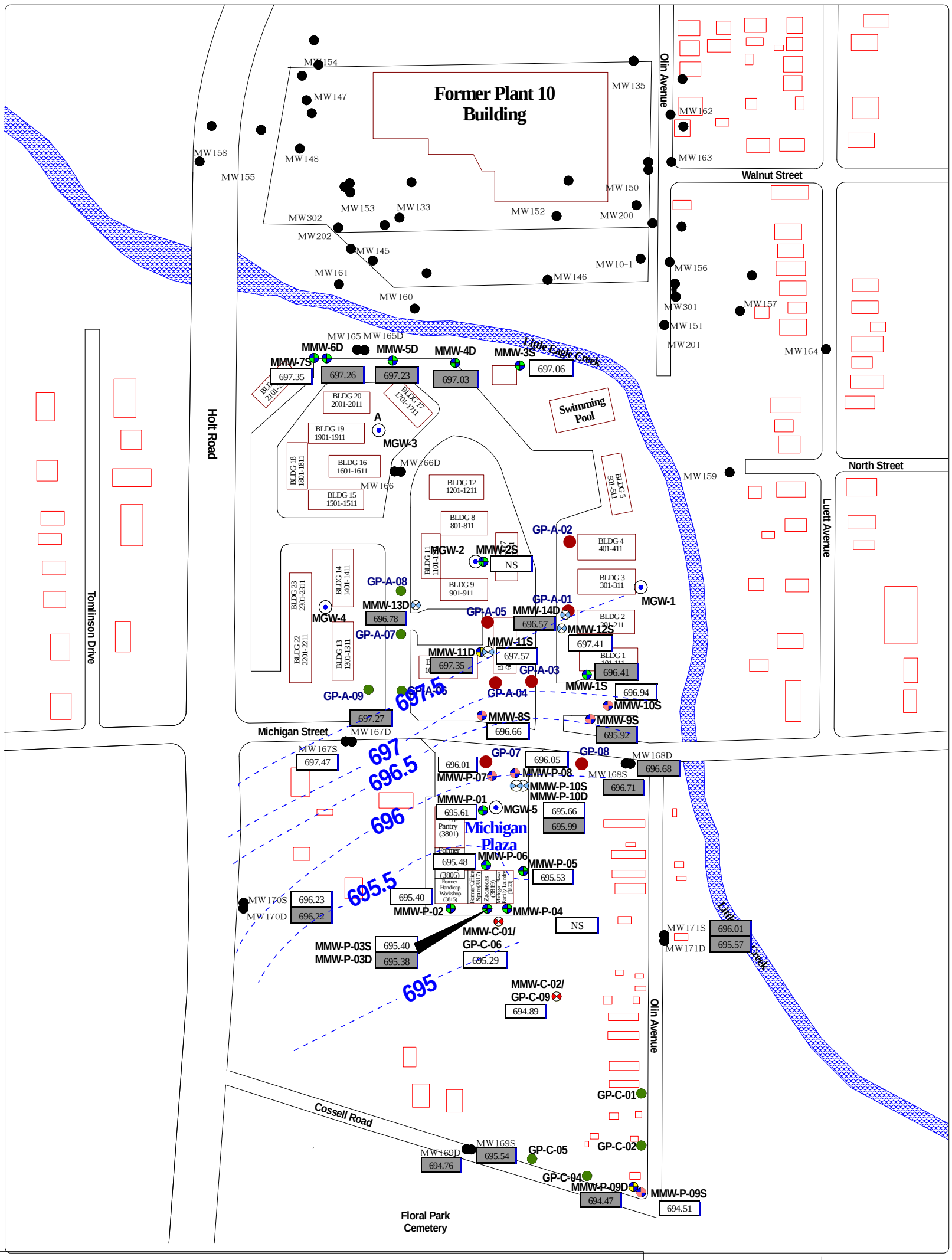
Project Number: M01046
Drawing File: Base Map.SKF
Date Prepared: 12/29/09
Scale: 1"=200' ±

Shallow Potentiometric Surface Map
November 2, 2009
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12j



LEGEND

———	Fence
MW160	Keramida Monitoring Wells
SS-P-01	MUNDELL Sewer Sampling Locations (September & November 2005)
GP-07	MUNDELL Soil Boring Locations (September 2005)
MMW-P-06	MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
GP-C-05	MUNDELL Soil Boring Locations (January 2007)
MMW-P-07	MUNDELL Monitoring Wells (January 2007)
MMW-P-09D	MUNDELL Monitoring Wells (May-June 2007)
MMW-C-01/ GP-C-06 MMW-11S	MUNDELL Monitoring Wells (August 2008) / MUNDELL Monitoring Wells (September 2008)
697.03	Water Level as Measured on February 3, 2010 (gray boxes indicate groundwater elevation values not used for the creation of the Potentiometric Surface Map)
699	Potentiometric Surface Equal Potential Lines

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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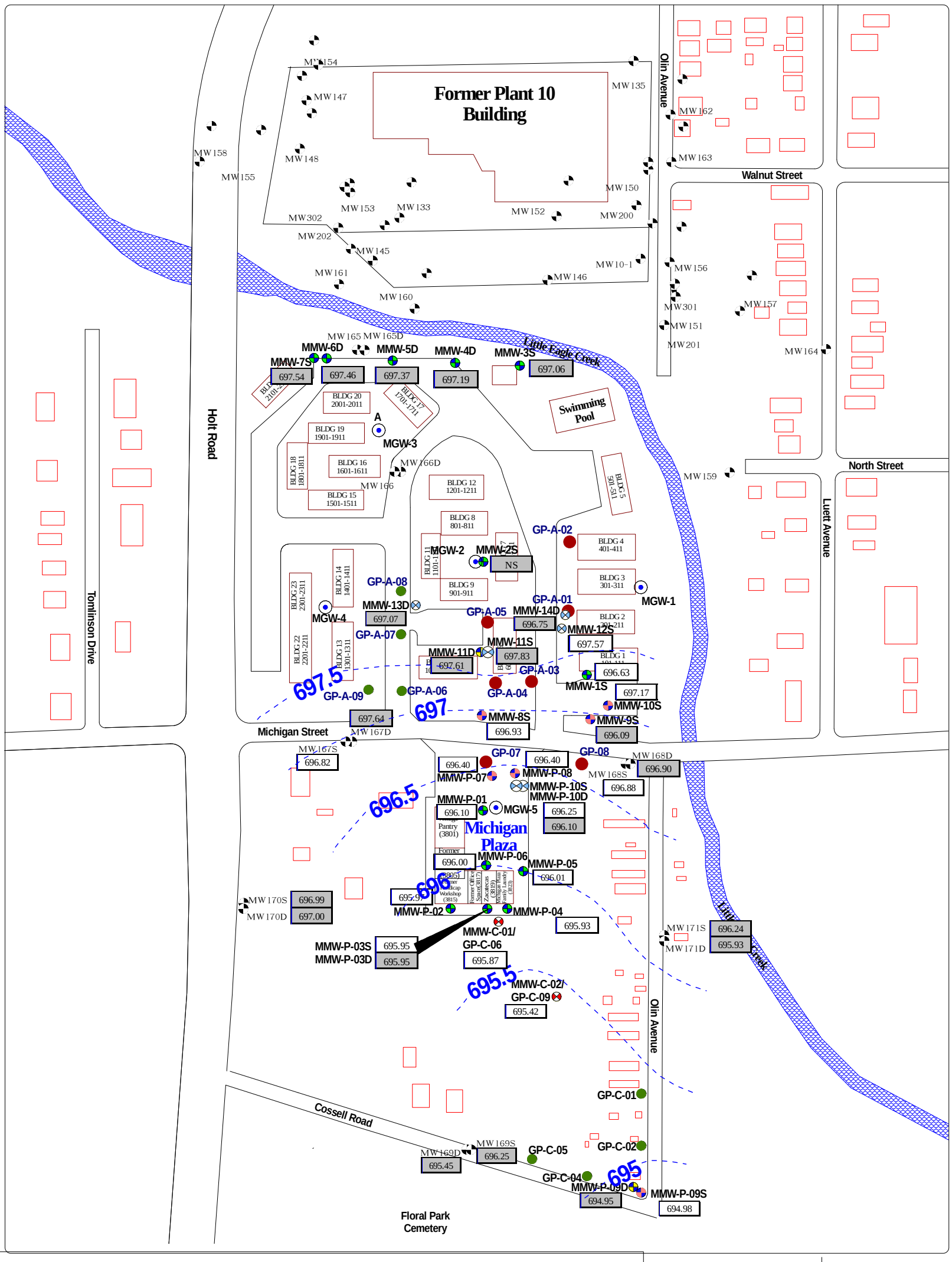
Project Number:	M01046
Drawing File:	Base Map.SKF
Date Prepared:	2/12/10
Scale:	1"=200' ±

Shallow Potentiometric Surface Map
February 3rd, 2010
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12k



LEGEND

———	Fence
MW160	Keramida Monitoring Wells
SS-P-01	MUNDELL Sewer Sampling Locations (September & November 2005)
GP-07	MUNDELL Soil Boring Locations (September 2005)
MMW-P-06	MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
GP-C-05	MUNDELL Soil Boring Locations (January 2007)
MMW-P-07	MUNDELL Monitoring Wells (January 2007)
MMW-P-09D	MUNDELL Monitoring Wells (May-June 2007)
MMW-C-01/ GP-C-06	MUNDELL Monitoring Wells (August 2008)
MMW-11S	MUNDELL Monitoring Wells (September 2008)
697.03	Water Level as Measured on February 3, 2010 (gray boxes indicate groundwater elevation values not used for the creation of the Potentiometric Surface Map)
699	Potentiometric Surface Equal Potential Lines

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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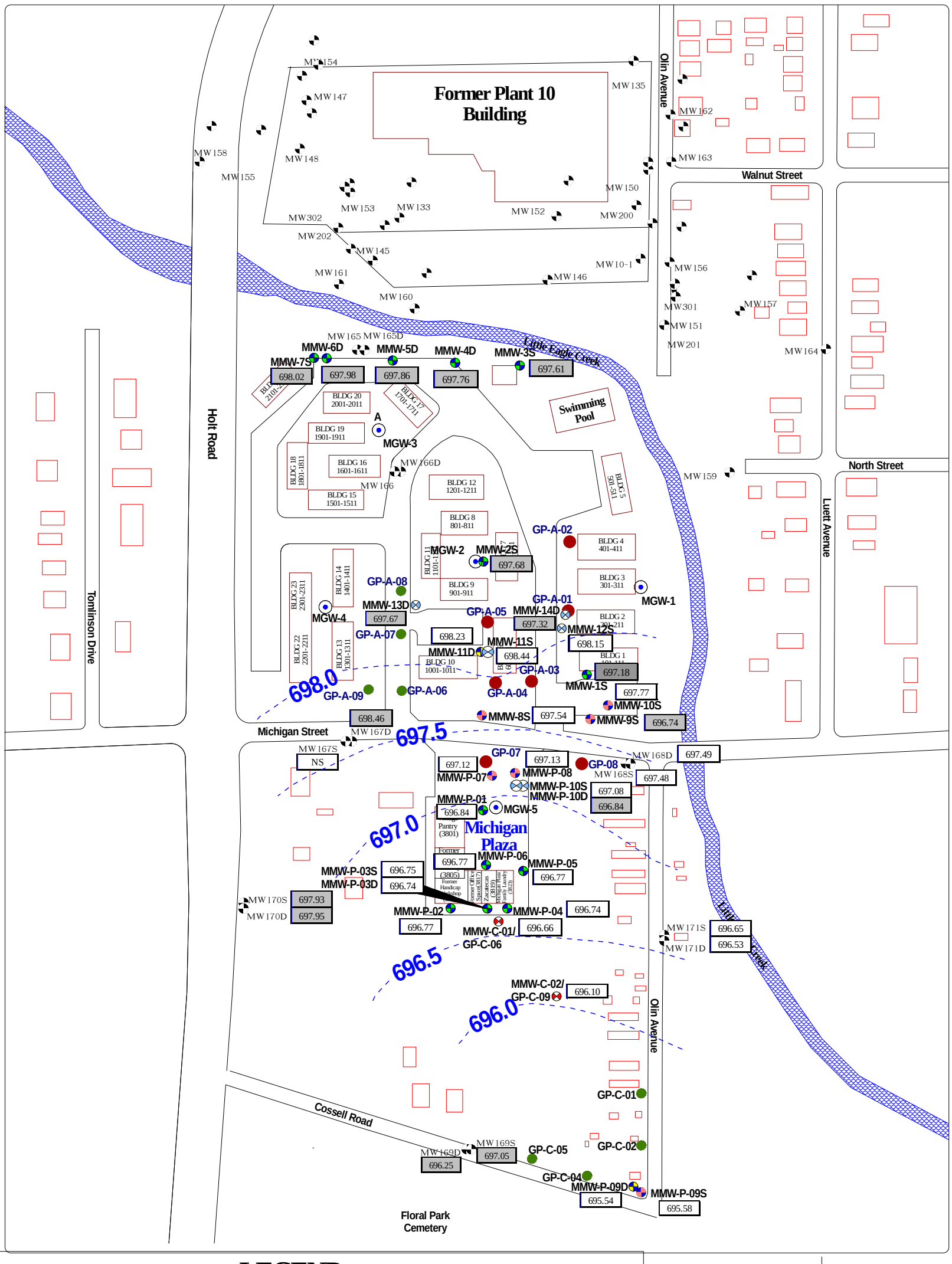
Project Number:	M01046
Drawing File:	Base Map.SKF
Date Prepared:	5/3/10
Scale:	1"=200' ±

Shallow Potentiometric Surface Map
April 20, 2010
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12L



LEGEND

———	Fence
MW160	Environ Monitoring Wells
SS-P-01	MUNDELL Sewer Sampling Locations (September & November 2005)
GP-07	MUNDELL Soil Boring Locations (September 2005)
MMW-P-06	MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
GP-C-05	MUNDELL Soil Boring Locations (January 2007)
MMW-P-07	MUNDELL Monitoring Wells (January 2007)
MMW-P-09D	MUNDELL Monitoring Wells (May-June 2007)
MMW-C-01/ GP-C-06	MUNDELL Monitoring Wells (August 2008)
MMW-11S	MUNDELL Monitoring Wells (September 2008)
697.03	Water Level as Measured on July 20, 2010 (gray boxes indicate groundwater elevation values not used for the creation of the Potentiometric Surface Map)
699	Potentiometric Surface Equal Potential Lines

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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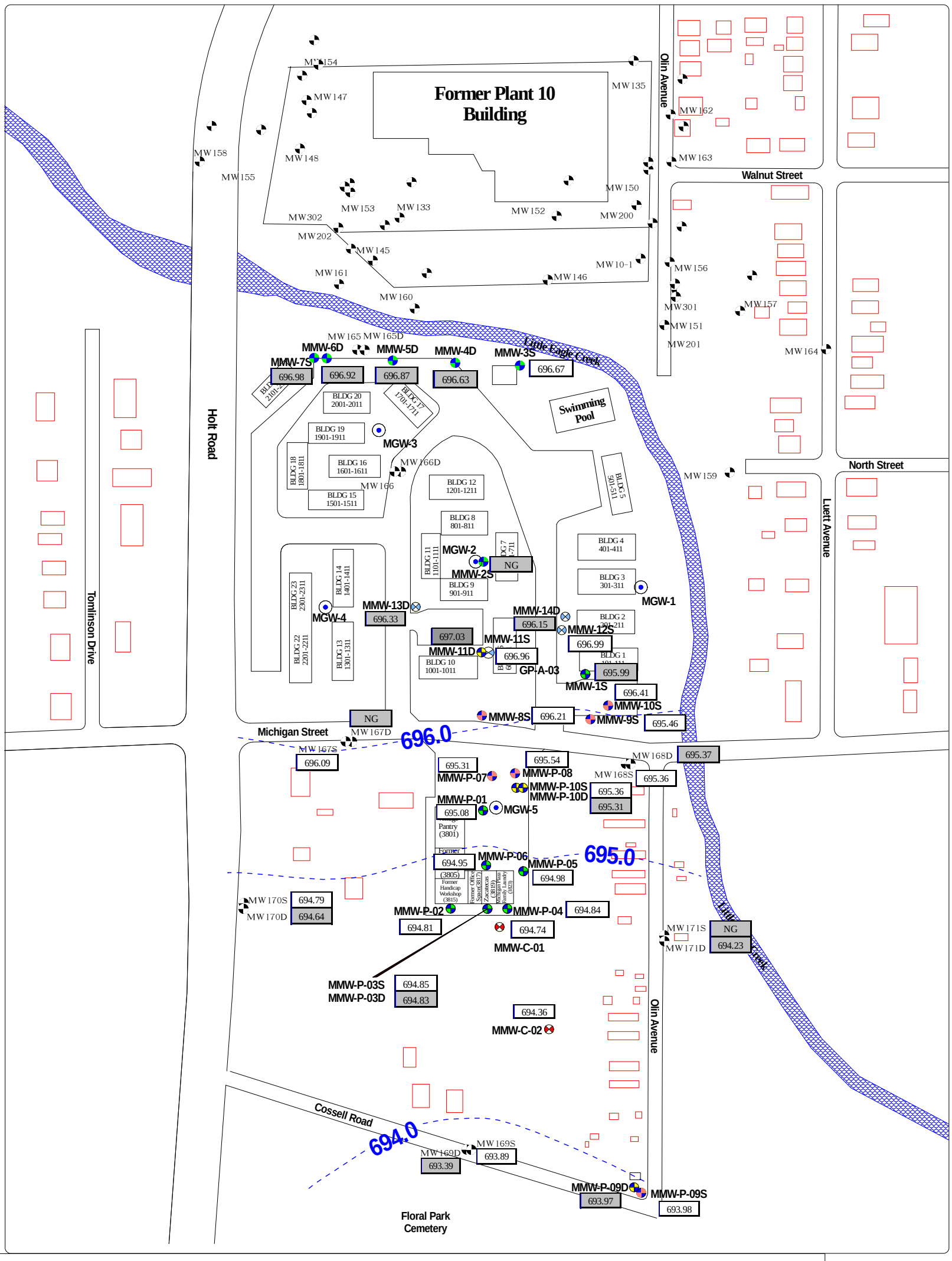
Project Number:	M01046
Drawing File:	Base Map.SKF
Date Prepared:	9/21/10
Scale:	1"=200' ±

Shallow Potentiometric Surface Map
July 20, 2010
Michigan Plaza
3801-3823 West Michigan Street
Indianapolis, Indiana

FIGURE
12m



LEGEND

———	Fence
MW160	Keramida/Environ Monitoring Wells
MMW-P-06	MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
MMW-P-07	MUNDELL Monitoring Wells (January 2007)
MMW-P-09D	MUNDELL Monitoring Wells (May-June 2007)
MMW-C-01	MUNDELL Monitoring Wells (July/August 2008)
MMW-11S	MUNDELL Monitoring Wells (November/December 2008)
MGW-1	MUNDELL Soil Gas Well

NG — Water Level as Measured on October 11, 2010 (gray boxes indicate groundwater elevation values not used for the creation of the Shallow Potentiometric Surface Map)

NG - Not Gauged

697.0 - - - - Potentiometric Surface Equipotential Lines

NORTH

SCALE 0 200 feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

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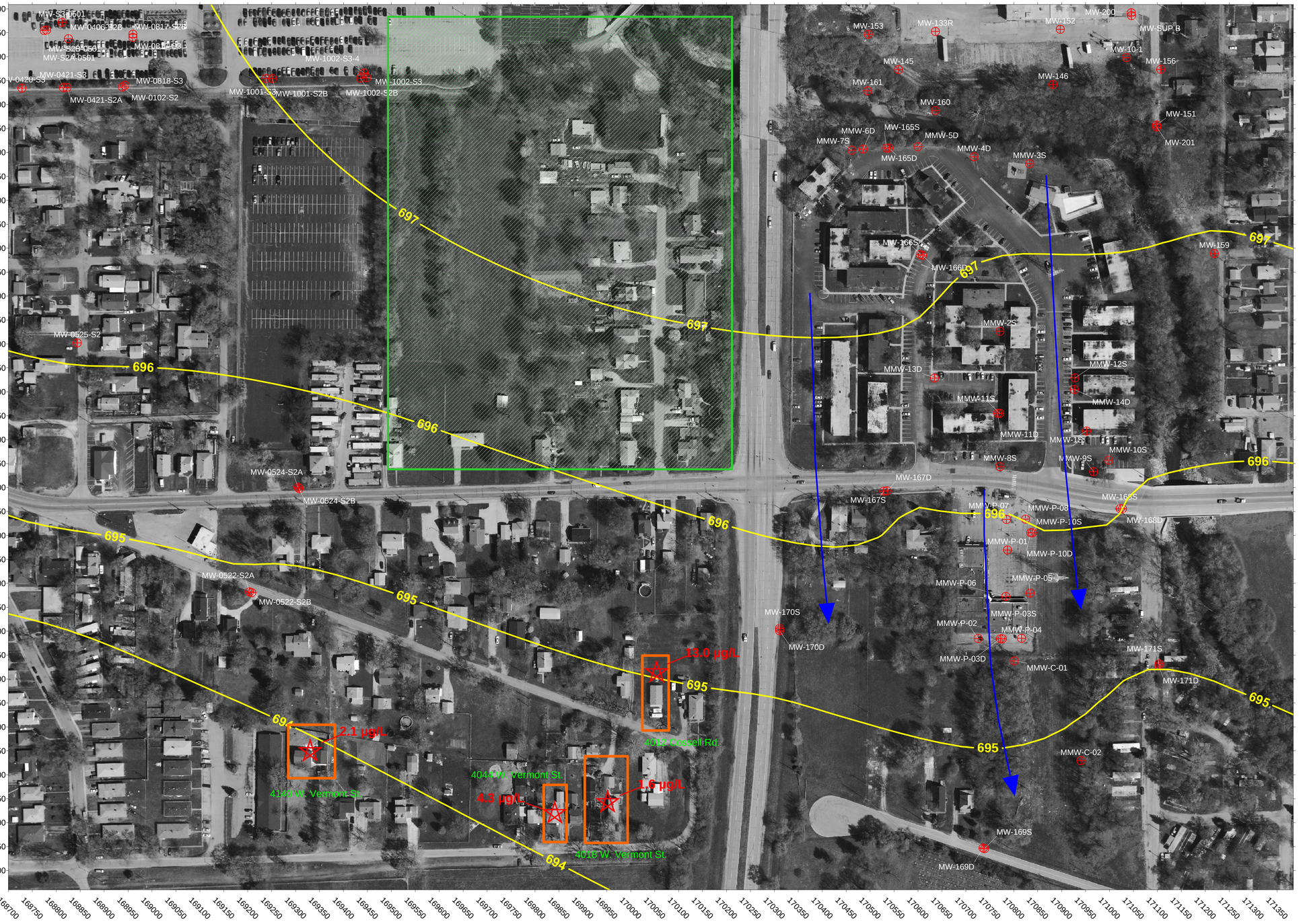
Project Number:	M01046
Drawing File:	Site Plan.skf
Date Prepared:	2/10/2011
Scale:	1"=200' ±

Shallow Potentiometric Surface Map October 11, 2010

Michigan Plaza
3801 - 3823 West Michigan Steet
Indianapolis, Indiana

FIGURE
12n



0 30 60 90 120

1" = 60'

Legend

- Monitoring Well
- Potentiometric Surface Contour (ft-MSL)
- Area with Insufficient Information
- Groundwater Flow Direction
- Residential well with vinyl chloride detections, sampled 7/7/2010

NOTE:

- The potentiometric surface was calculated based on top-of-casing data and groundwater elevations collected by the U.S. EPA on October 13, 2010.
- Aerial photograph obtained from the National Agriculture Imagery Program (NAIP), 2005.
- Groundwater elevation measurements collected near Allison Transmission Plant 12 were under the influence of pumping activities associated with a nearby remediation system. These groundwater elevations were omitted from this potentiometric surface calculation.

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REV	DATE	DESCRIPTION	BY	APPR

PROJECT NO.: M01046	FILE NAME: Q4,2010 Pot Map.srf
DRAWING NO.: Fig 1	PLOT SIZE: ANSI D
DRAFTED BY: MND	DATE: 3/16/11
CHECKED BY: SEW	DATE: 3/16/11
APPROVED BY: JAM	DATE:

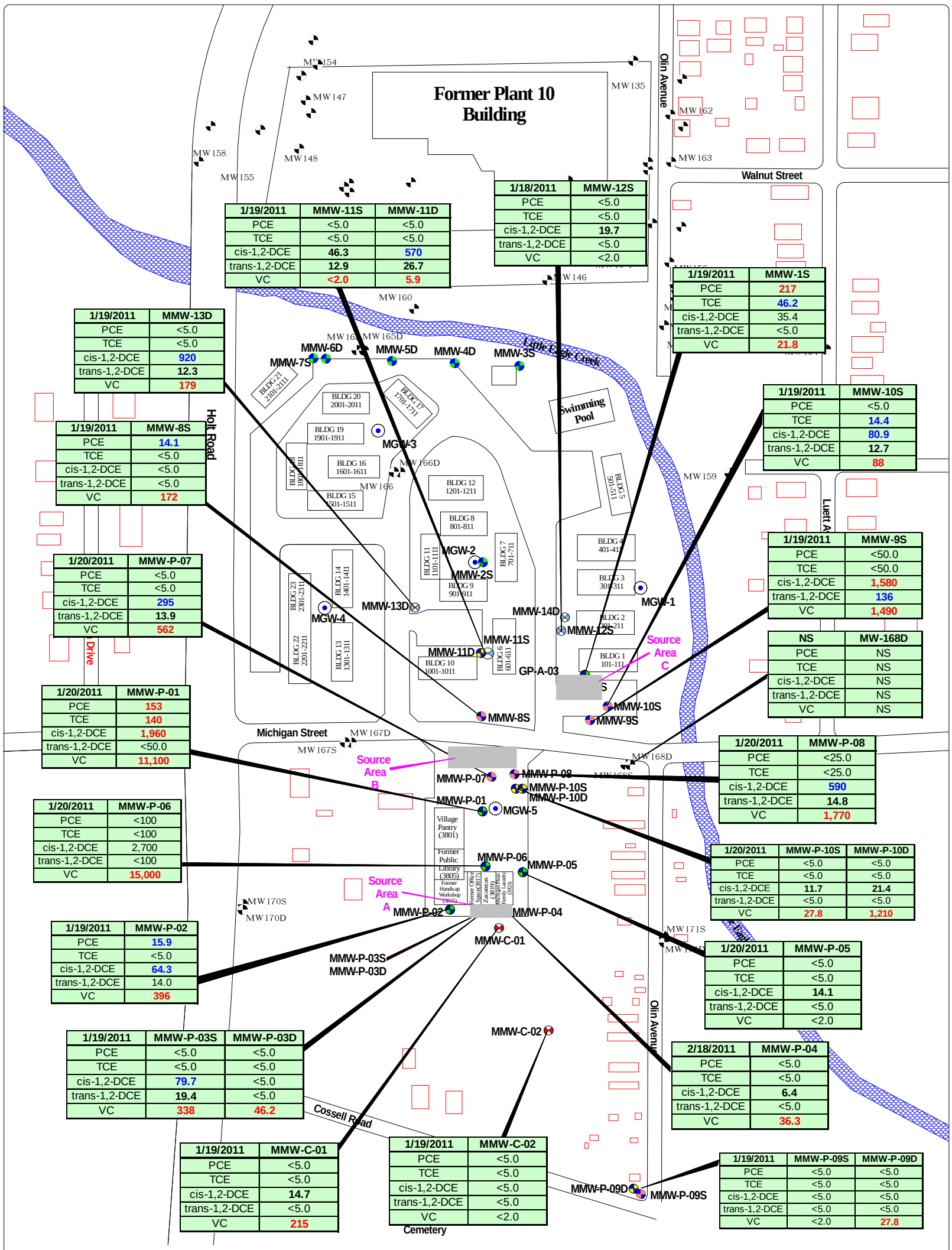
Potentiometric Surface Map

October 13, 2010

Vicinity of Michigan Plaza, Genuine Parts, and Allison Transmission Sites

FIGURE

13



1/19/2011	MMW-11S	MMW-11D
PCE	<5.0	<5.0
TCE	<5.0	<5.0
cis-1,2-DCE	**46.3**	**570**
trans-1,2-DCE	**12.9**	**26.7**
VC	**<2.0**	**5.9**

1/18/2011	MMW-12S
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**19.7**
trans-1,2-DCE	<5.0
VC	<2.0

1/19/2011	MMW-1S
PCE	**217**
TCE	**46.2**
cis-1,2-DCE	35.4
trans-1,2-DCE	<5.0
VC	**21.8**

1/19/2011	MMW-13D
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**920**
trans-1,2-DCE	**12.3**
VC	**179**

1/19/2011	MMW-10S
PCE	<5.0
TCE	**14.4**
cis-1,2-DCE	**80.9**
trans-1,2-DCE	**12.7**
VC	**88**

1/19/2011	MMW-8S
PCE	**14.1**
TCE	<5.0
cis-1,2-DCE	<5.0
trans-1,2-DCE	<5.0
VC	**172**

1/19/2011	MMW-9S
PCE	<50.0
TCE	<50.0
cis-1,2-DCE	**1,580**
trans-1,2-DCE	**136**
VC	**1,490**

NS	MW-168D
PCE	NS
TCE	NS
cis-1,2-DCE	NS
trans-1,2-DCE	NS
VC	NS

1/20/2011	MMW-P-07
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**295**
trans-1,2-DCE	**13.9**
VC	**562**

1/20/2011	MMW-P-01
PCE	**153**
TCE	**140**
cis-1,2-DCE	**1,960**
trans-1,2-DCE	<50.0
VC	**11,100**

1/20/2011	MMW-P-08
PCE	<25.0
TCE	<25.0
cis-1,2-DCE	**590**
trans-1,2-DCE	**14.8**
VC	**1,770**

1/20/2011	MMW-P-06
PCE	<100
TCE	<100
cis-1,2-DCE	2,700
trans-1,2-DCE	<100
VC	**15,000**

1/20/2011	MMW-P-10S	MMW-P-10D
PCE	<5.0	<5.0
TCE	<5.0	<5.0
cis-1,2-DCE	**11.7**	**21.4**
trans-1,2-DCE	<5.0	<5.0
VC	**27.8**	**1,210**

1/19/2011	MMW-P-02
PCE	**15.9**
TCE	<5.0
cis-1,2-DCE	**64.3**
trans-1,2-DCE	14.0
VC	**396**

1/20/2011	MMW-P-05
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**14.1**
trans-1,2-DCE	<5.0
VC	<2.0

1/19/2011	MMW-P-03S	MMW-P-03D
PCE	<5.0	<5.0
TCE	<5.0	<5.0
cis-1,2-DCE	**79.7**	<5.0
trans-1,2-DCE	**19.4**	<5.0
VC	**338**	**46.2**

2/18/2011	MMW-P-04
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**6.4**
trans-1,2-DCE	<5.0
VC	**36.3**

1/19/2011	MMW-C-01
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**14.7**
trans-1,2-DCE	<5.0
VC	**215**

1/19/2011	MMW-C-02
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	<5.0
trans-1,2-DCE	<5.0
VC	<2.0

1/19/2011	MMW-P-09S	MMW-P-09D
PCE	<5.0	<5.0
TCE	<5.0	<5.0
cis-1,2-DCE	<5.0	<5.0
trans-1,2-DCE	<5.0	<5.0
VC	<2.0	**27.8**

LEGEND

- Fence
- MW160 — Keramida/Environ Monitoring Wells
- MMW-P-06 — MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
- MMW-P-07 — MUNDELL Monitoring Wells (January 2007)
- MMW-P-09D — MUNDELL Monitoring Wells (May-June 2007)
- MMW-C-01 — MUNDELL Monitoring Wells (July/August 2008)
- MMW-11S — MUNDELL Monitoring Wells (November/December 2008)
- MGW-1 — MUNDELL Soil Gas Well

1/19/2011	MMW-C-01
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**14.7**
trans-1,2-DCE	<5.0
VC	**215**

All Values Over IDEM RISC Default Industrial Cleanup Level in **RED**
All Values Over IDEM RISC Default Residential Cleanup Level in **BLUE**
PCE = Tetrachloroethene;
TCE = Trichloroethene;
cis-1,2-DCE = cis-1,2-Dichloroethene;
trans-1,2-DCE = trans-1,2-Dichloroethene
VC = Vinyl Chloride
NS = Not Sampled

IDEM RISC Default Industrial Cleanup Level	55	31	1000	2000	1000	4
IDEM RISC Default Residential Cleanup Level	5	5	70	100	80	2

NORTH

SCALE 0 200 feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

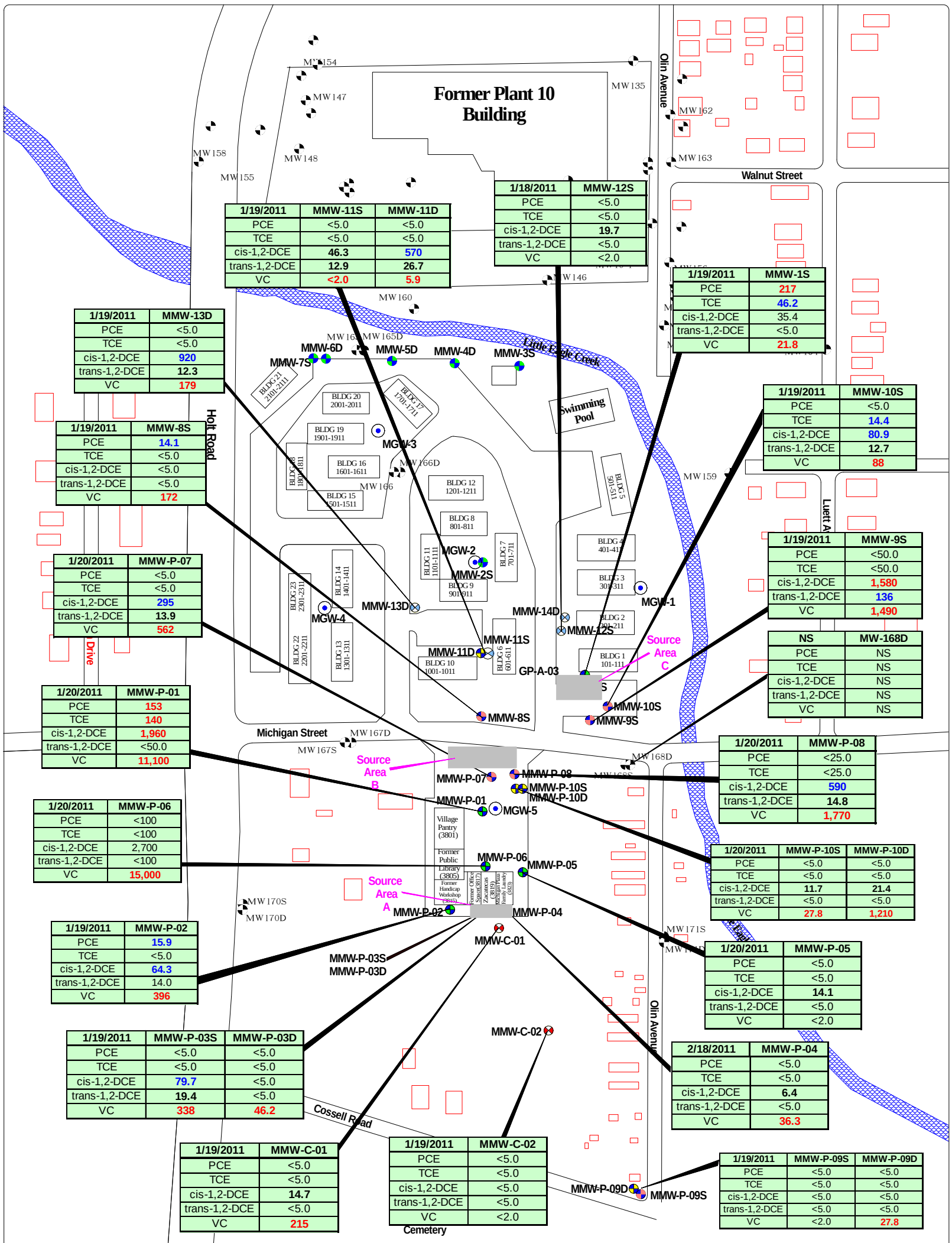
Mundell Consulting Professionals for the Earth and the Environment
110 South Downey Avenue
Indianapolis, Indiana 46219-6406
317-630-9060, fax 317-630-9065

Project Number: M01046
Drawing File: Fig_3 GWAnalytical.skf
Date Prepared: 2/28/2011
Scale: 1"=200' ±

Groundwater Analytical Map
1st Quarter 2011
Sampling Date: January 18-20, 2011

Michigan Plaza
3801 - 3823 West Michigan Steet
Indianapolis, Indiana

FIGURE
14



1/19/2011	MMW-11S	MMW-11D
PCE	<5.0	<5.0
TCE	<5.0	<5.0
cis-1,2-DCE	**46.3**	**570**
trans-1,2-DCE	**12.9**	**26.7**
VC	**<2.0**	**5.9**

1/18/2011	MMW-12S
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**19.7**
trans-1,2-DCE	<5.0
VC	<2.0

1/19/2011	MMW-1S
PCE	**217**
TCE	**46.2**
cis-1,2-DCE	35.4
trans-1,2-DCE	<5.0
VC	**21.8**

1/19/2011	MMW-13D
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**920**
trans-1,2-DCE	**12.3**
VC	**179**

1/19/2011	MMW-10S
PCE	<5.0
TCE	**14.4**
cis-1,2-DCE	**80.9**
trans-1,2-DCE	**12.7**
VC	**88**

1/19/2011	MMW-8S
PCE	**14.1**
TCE	<5.0
cis-1,2-DCE	<5.0
trans-1,2-DCE	<5.0
VC	**172**

1/19/2011	MMW-9S
PCE	<50.0
TCE	<50.0
cis-1,2-DCE	**1,580**
trans-1,2-DCE	**136**
VC	**1,490**

NS	MW-168D
PCE	NS
TCE	NS
cis-1,2-DCE	NS
trans-1,2-DCE	NS
VC	NS

1/20/2011	MMW-P-07
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**295**
trans-1,2-DCE	**13.9**
VC	**562**

1/20/2011	MMW-P-01
PCE	**153**
TCE	**140**
cis-1,2-DCE	**1,960**
trans-1,2-DCE	<50.0
VC	**11,100**

1/20/2011	MMW-P-08
PCE	<25.0
TCE	<25.0
cis-1,2-DCE	**590**
trans-1,2-DCE	**14.8**
VC	**1,770**

1/20/2011	MMW-P-06
PCE	<100
TCE	<100
cis-1,2-DCE	2,700
trans-1,2-DCE	<100
VC	**15,000**

1/20/2011	MMW-P-10S	MMW-P-10D
PCE	<5.0	<5.0
TCE	<5.0	<5.0
cis-1,2-DCE	**11.7**	**21.4**
trans-1,2-DCE	<5.0	<5.0
VC	**27.8**	**1,210**

1/19/2011	MMW-P-02
PCE	**15.9**
TCE	<5.0
cis-1,2-DCE	**64.3**
trans-1,2-DCE	14.0
VC	**396**

1/20/2011	MMW-P-05
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**14.1**
trans-1,2-DCE	<5.0
VC	<2.0

1/19/2011	MMW-P-03S	MMW-P-03D
PCE	<5.0	<5.0
TCE	<5.0	<5.0
cis-1,2-DCE	**79.7**	<5.0
trans-1,2-DCE	**19.4**	<5.0
VC	**338**	**46.2**

2/18/2011	MMW-P-04
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**6.4**
trans-1,2-DCE	<5.0
VC	**36.3**

1/19/2011	MMW-C-01
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**14.7**
trans-1,2-DCE	<5.0
VC	**215**

1/19/2011	MMW-C-02
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	<5.0
trans-1,2-DCE	<5.0
VC	<2.0

1/19/2011	MMW-P-09S	MMW-P-09D
PCE	<5.0	<5.0
TCE	<5.0	<5.0
cis-1,2-DCE	<5.0	<5.0
trans-1,2-DCE	<5.0	<5.0
VC	<2.0	**27.8**

LEGEND

- Fence
- MW160 — Keramida/Environ Monitoring Wells
- MMW-P-06 — MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
- MMW-P-07 — MUNDELL Monitoring Wells (January 2007)
- MMW-P-09D — MUNDELL Monitoring Wells (May-June 2007)
- MMW-C-01 — MUNDELL Monitoring Wells (July/August 2008)
- MMW-11S — MUNDELL Monitoring Wells (November/December 2008)
- MGW-1 — MUNDELL Soil Gas Well

1/19/2011	MMW-C-01
PCE	<5.0
TCE	<5.0
cis-1,2-DCE	**14.7**
trans-1,2-DCE	<5.0
VC	**215**

All Values Over IDEM RISC Default Industrial Cleanup Level in **RED**
All Values Over IDEM RISC Default Residential Cleanup Level in **BLUE**
PCE = Tetrachloroethene;
TCE = Trichloroethene;
cis-1,2-DCE = cis-1,2-Dichloroethene;
trans-1,2-DCE = trans-1,2-Dichloroethene
VC = Vinyl Chloride
NS = Not Sampled

IDEM RISC Default Industrial Cleanup Level	55	31	1000	2000	1000	4
IDEM RISC Default Residential Cleanup Level	5	5	70	100	80	2

NORTH

SCALE
0 200
feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

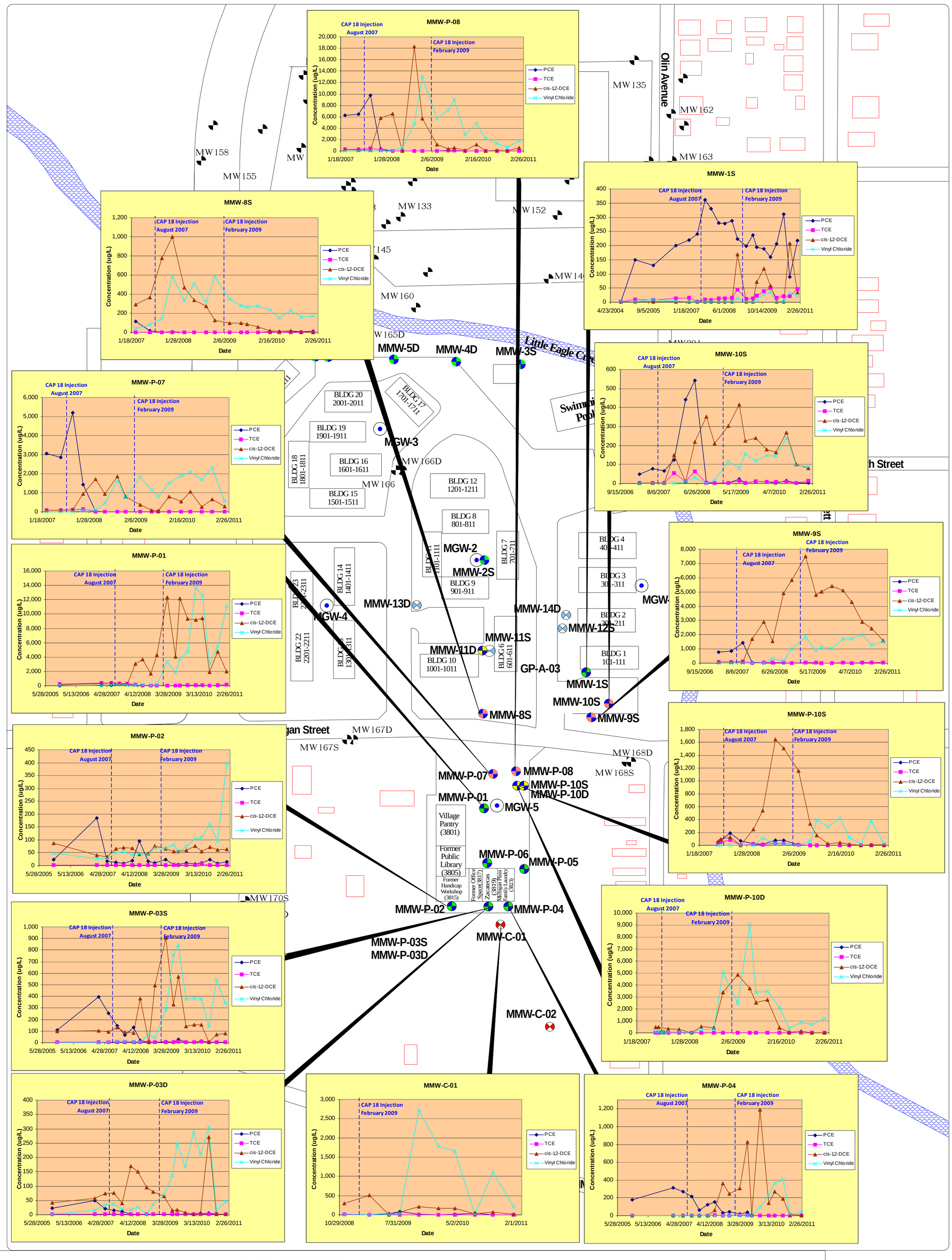
Mundell Consulting Professionals for the Earth and the Environment
110 South Downey Avenue
Indianapolis, Indiana 46219-6406
317-630-9060, fax 317-630-9065

Project Number: M01046
Drawing File: Fig_3 GWAnalytical.skf
Date Prepared: 2/28/2011
Scale: 1"=200' ±

Groundwater Analytical Map
1st Quarter 2011
Sampling Date: January 18-20, 2011

Michigan Plaza
3801 - 3823 West Michigan Steet
Indianapolis, Indiana

FIGURE
14a



LEGEND

———	Fence
MW160	Keramida/Environ Monitoring Wells
MMW-P-06	MUNDELL Monitoring Wells, Michigan Plaza (September 2005)
MMW-P-07	MUNDELL Monitoring Wells (January 2007)
MMW-P-09D	MUNDELL Monitoring Wells (May-June 2007)
MMW-C-01	MUNDELL Monitoring Wells (July/August 2008)
MMW-11S	MUNDELL Monitoring Wells (November/December 2008)
MGW-1	MUNDELL Soil Gas Well

NORTH

SCALE 0 200

feet

Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.
Project No. 2829
March 13, 2002

Mundell
Consulting Professionals for the Earth and the Environment
110 South Downey Avenue
Indianapolis, Indiana 46219-6406
317-630-9060, fax 317-630-9065

Project Number: M01046

Drawing File: Fig_4 IndicatorTrends .skf

Date Prepared: 2/28/2011

Indicator Compound Trends in Groundwater
1st Quarter 2011
Sampling Date: January 18-20, 2011

Michigan Plaza
3801 - 3823 West Michigan Steet
Indianapolis, Indiana

FIGURE
14b

ADDENDUM

SUPERFUND MEMORANDUM OF AGREEMENT

Brownfields and Voluntary Remediation Program

Introduction

IDEM and U.S. EPA, Region V, recognize that the revitalization of contaminated or potentially contaminated properties (Brownfields) will provide a significant benefit to both th environment and the economy of the local communities. To the extent possible, Region V and IDEM seek to facilitate the productive use of industrial and commercial properties by addressing regulatory impediments to the financing, transfer, and appropriate reuse of these properties. Both agencies recognize that a key factor to meet this goal is to exercise their authorities and use their resources in ways that are mutually complementary and are not duplicative. In particular, IDEM and Region V seek to protect human health and the environment by encouraging the voluntary investigation and cleanup of properties in Indiana by implementing the following strategic goals:

1. Promoting appropriate investigations and cleanups by parties participating in the Voluntary Remediation Program (VRP).

2. Developing partnerships between Region V, IDEM, other federal, state, local governmental agencies, and key external stakeholders in Indiana, including representatives from citizen/community groups and the private sector.

3. Providing necessary information to the key stakeholders in Indiana to allow for informed decision-making by property owners, prospective purchasers, lenders, pub and private developers, citizens, municipalities, counties and elected officials.

4. Promoting the adequate remediation and revitalization of contaminated or potentially contaminated properties in Indiana for an appropriate use as determined by the key stakeholders.

In order to accomplish these goals, Region V intends to assist IDEM in further expanding t use of the VRP. Region V recognizes that the VRP has been developing and implementing successful strategies to help promote the voluntary investigation and cleanup of under-utiliz properties. Similarly, IDEM intends to assist and support efforts to promote and implemer Region V's Brownfields activities. IDEM recognizes Region V as a key partner in the ongoing success of state voluntary cleanup programs, including the VRP, and the role of Region V in addressing the uncertainty of financing, transferring and developing Brownfiel sites by clarifying the risk of federal liability.

Principles

When a site in Indiana has been investigated or remediated in accordance with the practices and procedures of the VRP and IDEM has issued a Certificate of Completion for the site, Region V will not plan or anticipate any federal action under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA/Superfund) unless, in exceptional circumstances, the site poses an imminent and substantial threat to human health or the environment. In all cases, the Region V decision will be based strictly on the information available at the time of IDEM determination. The foregoing principle does not apply to sites listed on the NPL or sites currently subject to orders or enforcement actions under Superfund law.

Region V will continue to work with IDEM to remove any concerns associated with federal activity under Superfund so as to encourage the financing, transfer and appropriate redevelopment and use of industrial and commercial property. In addition, Region V will continue to provide technical assistance and, in its discretion, financial support to local and state governmental agencies in order to facilitate the revitalization of contaminated or potentially contaminated properties in Indiana.

Reporting

On an annual basis, IDEM will report to Region V on the following:

1. Number of sites in the VRP.

2. Sites entering the VRP in the previous year.

3. Sites having received Certificates of Completion in the previous year.

Several operational factors are important and will complement the mutual objectives of both IDEM and Region V:

1. IDEM has successfully operated a Voluntary Remediation Program (VRP) since 199

2. Region V and IDEM find the VRP provides for response actions that are protective human health and the environment.

3. Region V and IDEM find the VRP provides adequate opportunities for public involvement and technical assistance.

4. At sites successfully completing a remediation under the VRP, Region V does not plan or anticipate any federal action under the Superfund law (CERCLA) unless, in exceptional circumstances, the site poses an imminent threat to human health and the environment.

5. The State of Indiana and IDEM have made a substantial commitment to the VRP and the revitalization of contaminated property (Brownfields redevelopment) by, among other things, passage of House Resolution 40 establishing an Interim Study Committee for Brownfields issues and the establishment of a Brownfields Coordinator position at IDEM.

6. Region V will continue to work with IDEM to remove any concerns associated with federal activity under Superfund so as to encourage the financing, transfer, and appropriate redevelopment and use of industrial and commercial property.

7. Region V will continue to provide technical assistance and, at its discretion, financial support to local and state governmental agencies in order to facilitate the revitalizatior of contaminated or potentially contaminated properties in Indiana.

For the State of Indiana:

Kathy Prosser
Commssioner

Indiana Department of
Environmental Management

Dec. 4, 1995
Date

For the U.S. Environmental Protection Ag
Region V:

Valdas V. Adamkus
Regional Administrator

U. S. EPA, Region V

Nov. 30, 1995.
Date